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SCHOOL AND SOCIETY

Volume III SATURDAY, JUNE 17, 1916 Number 77

VOCATIONAL TRAINING THROUGH TRADE AND CONTINUATION SCHOOLS AND ITS RELATION TO THE DEMOCRACY OF EDUCATION

BUSINESS men will admit the ease with which business becomes bound up in tradition and fettered by practises which served well under old conditions. Numbers of men will say that successful business depends largely upon the breaking away from such traditions and the prompt meeting of new conditions as they develop.

In like manner the schools become bound up in tradition and fettered by practises which served an age now gone. It is only in recent years that the school has made serious attempts to discover facts as they exist and to meet present conditions instead of obsolete theories. It is perhaps more difficult for an institution depending for its maintenance upon public support to revise its procedure and to meet new conditions than it is for the business man.

NECESSITY FOR MANY TYPES OF SCHOOL

Some one has said that education is for complete living, and complete living involves training for appreciation, for ability to earn a livelihood and for discharge of the duties of citizenship. Were public education restricted to one selected group of children then one type of school might be sufficient, but public education aims to meet the needs of all children. We must recognize the great varieties of interest and ability possessed by different groups of children and the wide range of industrial activities which they will enter. All of these groups are important factors in society. Society is well served only when each group reaches the highest attainments of which it is capable. Each group, therefore, should receive the kind of training best adapted to its needs. This means a great variety of school opportunities.

YOUNG WORKERS HAVE HAD FEW CHAMPIONS

Until recently, school departments have not concerned themselves with the educational needs of children who leave the regular schools. The attitude of the public has been, "Stay in school and take what is offered you or leave school and shift for yourself." The school purse has been open to those who remain in the regular school; it has been closed to those who thought it necessary or desirable to leave. The welfare of children who can spend full time in school preparing for college or dawdling into habits of failure has been of grave concern. The welfare of those children who must bring money home to mother and those who rebel at continued failure in the regular school has been ignored. So long as a child has remained in the regular school, the champions of his cause have been many. The child who has left the regular school has had no champion.

All children will take their places in society. The civic whole can be improved by the elevation of its less fortunate factors quite as much as by an undemocratic regard for its favored few. Society has swelled the ranks of the proletariat by ignoring the needs of children who leave school at an early age.

Under the guise of being democratic, our public schools have opened their doors to

all. Opportunities adapted only to the needs of the few have been offered. Those whose needs were not met left school to enter employment. Real democracy is not possible when means of educational improvement are provided only for that group of individuals whose tastes are in accord with the conventional system of education. Especially is this true when it is plain that the conventional system can be modified and supplemented to meet the tastes and requirements of all. The public schools will be truly democratic only when there is opportunity for each pupil to satisfy his individual needs as an industrial unit and as a citizen.

Conservation of our natural resources has been a watchword. Timber, coal, water, birds and animals have received the government's attention for years, while men and women of the coming generation have been neglected.

Who shall say which children shall be trained and which left in ignorance? Who shall pick out the "drawers of water and hewers of stone"? Who shall say that the child entering high school shall receive a public expenditure of $80 per year while the child who works receives nothing? Who shall say that society is less responsible for one than for the other? Who shall *deny* that the state is ready for complete living *only* when *every* individual reaches his utmost possibilities as an industrial unit and as an appreciative citizen?

THE CONVENTIONAL SCHOOL CAN NOT MEET THE NEEDS OF ALL CHILDREN

I would not be understood as criticizing the regular schools. They are doing far better than ever before the task which they are organized and equipped to handle. Never before have pupils possessed as much power in the essentials, the three R's, as at the present time.

But many children do not succeed in the regular schools farther than the point of literacy and the beginnings in mere fundamentals. Some of these children dawdle on in school while others enter employment. A child who fails in school does not of necessity fail in life, but his knowledge of school failure is a serious handicap.

The regular school can not meet the needs of all children beyond the point of literacy. Society has been content to accept literacy as a minimum standard of compulsory school attainment. Society now demands in addition to literacy that the child shall be well advanced in the fundamentals of general education or at least well started in his preparation for earning a livelihood and for discharging his duties as a citizen.

Conventional school systems provide a fund of general information, mental training and discipline. Conventional education deals largely in abstract matter. Many children have not the power to grasp this abstract matter. They are the school failures. Some children who grasp the abstract matter are unable to apply it to the problems of life. They are the educated failures who bring upon our schools the condemnation of business men. It is clear that the training of these failures must be made more concrete, must be more closely related to the real problems of life. So far as the problems of life for these people relate to the earning of a livelihood, they are for some, problems of clerical service; for others, problems of commerce; for others, problems of an industry or a trade; and for others, problems of agriculture. All this means school specialization if the school is to meet the varying needs of these concrete-minded groups. It does not mean that training for real culture and appreciative citizenship need be one whit less effective.

Just where school specialization should begin is an open question. In my opinion it should begin before the end of the present compulsory school period. At the age of twelve or soon thereafter children may well begin to formulate their tentative programs leading to wise vocational selection. In the formation of these programs, vocational guidance finds its place. These programs will undergo many and radical changes, but with a program the child has at least a purpose and he sees that his school work leads toward the goal he hopes to reach.

It is not so important that the child shall select at this early age the exact vocation which he will later follow as it is for the child to have a vocational aim which will act as an educational incentive.

PREPARATION FOR A LIVELIHOOD

At the end of the compulsory school period, it often becomes necessary for children to turn their attention to preparation for a livelihood. Some are often obliged to leave school at that age. Parents and children alike have been able to see little promise of preparation for a livelihood in the training given by the regular schools. Many children would remain longer in school if the promise of preparation for a livelihood were apparent. Many children who have left school at the end of the compulsory period have done so for the purpose of securing preparation for a livelihood through employment.

In the days of apprenticeship and prior to the present degree of specialization in industry, children were able to secure excellent preparation for a livelihood through employment, but industry has now become so specialized that adequate training for a livelihood is not possible in employment.

For some years a certain amount of educational specialization has been offered in high schools. To a college course there was added the commercial course which has become common the country over. In some cities manual training has been superimposed upon the study of the general cultural subjects, and in some cities, industrial schools have been added, giving preparation in a very limited number of callings.

This is good as far as it goes, but it does not go far enough. It is probably impossible for the public-school system, except in the largest cities, to offer a variety of opportunities sufficiently wide to meet properly the needs of every child. It must be admitted, however, that practically all of our cities can offer greater variety of opportunities than they have already offered.

Whatever restriction must be made in the variety of opportunities offered to the youth of a city, society should bear in mind that the child who is interested in those opportunities offered is receiving a decided advantage over those other children who are not interested, and through no fault of their own, are refused the opportunities which they need; and in any city where the needs of any group of children are not being met, there remains a blot on the democracy of that city's education.

MORE CHILDREN WILL REMAIN IN SCHOOL

As the variety of opportunities increase in the schools, the number of children continuing their education will also increase. The schools can retain increasing numbers of children as greater variety of educational opportunity is offered and methods employed which appeal to and more adequately meet the needs of those children who now leave. There will always remain, however, a group of children who from economic necessity are forced to become wage-earners or because of individual peculiarity

are better off in employment. The regular schools have not and probably could not assume responsibility for the welfare of this group because the regular school is neither organized nor equipped for that task.

VARIOUS GROUPS OF CHILDREN

Among the children who have accomplished the attainment of literacy by the twelfth or thirteenth year, we may expect to find the following groups roughly classified:

1. Those who are expected to go through college.
2. Those adapted to academic training who can spend several more years in school, delay their vocational selection and secure a rather thorough general education.
3. Those adapted to academic training who can spend several more years in school but who must specialize in preparation for a selected calling that they may be economically independent upon leaving school.
4. Those adapted to trade training who can spend several more years in school.
5. Those who enter employment at an early age.

Latin schools and general high schools provide for those who go to college, and those who delay their vocational selections. Commercial departments in high schools, high schools of commerce, clerical high schools, practical arts high schools and technical schools provide for those who, adapted to academic training, specialize in preparation for selected callings. Partial provision is commonly made for this group.

Trade and industrial schools will provide for those adapted to trade training. Provisions for this group are being rapidly made. Continuation schools, often known as part-time schools, will provide for the young workers. Milwaukee and Boston have made provision for this group and other cities are preparing to do so.

Certain of those whom the regular school can never reach are adapted to trade training and some who are well adapted to the regular school desire trade training.

THE TRADE SCHOOL

A real trade school intensively teaching the practical knowledge of trades and efficiently training its pupils in manipulative skill will put on the road to economic independence and civic usefulness boys and girls whom the regular schools can never reach. A real trade school taught by real tradesmen in a trade manner benefits the individual, dignifies labor and contributes to industry. Such a school does for the future tradesman quite as much as the commercial department in high school does for the future stenographer and bookkeeper.

I wish to distinguish between trade preparation and manual training. The terms indicate the difference. Of manual training, as such, I most heartily approve. It is valuable and necessary training regardless of the vocation which a pupil enters.

Manual training, superimposed upon the regular academic courses of a high school does not constitute a trade school. Amalgamating a trade school with an academic high school is like wearing overalls over a dress suit. There's a fear that the overalls will injure the suit.

EMPLOYMENT FOR THE YOUNG WORKER

What to do with our boys and girls who leave school at an early age is a difficult question, and, being difficult, it has been left largely to solve itself. A boy of this group must choose one of *three* things.

He may apprentice himself to some trade, but the chances of his being able to do so are remote. Very few concerns employ boys as apprentices. Boys are employed for what they can turn out at the start.

They are not taught more than the single operation they perform. If a boy is quick enough between strokes to master his superior's job, he is promoted; if not, he continues to do a boy's work, or he joins that vast array of transient unskilled laborers. It has been said that even the son of a tradesman has no opportunity to learn a trade. If he is to secure a trade he must steal it.

He may enter some store or office, hoping to learn the business. This could be done in the days of small stores, but now the subdivision of labor is almost as great as in the factory and little or no attempt is made to instruct the boy in matters which must be understood by those who are to hold the more important positions.

He may secure a position of a temporary character which does not lead to employment suitable for a man. And this he is likely to do; first, because there are more such openings; and, second, they invariably pay a higher wage. At eighteen or twenty years of age, such a youth finds himself too old for a boy's work and unprepared for a man's. He must then begin where he should have started years before, or become another recruit of the unskilled transients while his place is taken by the trade-trained immigrant.

Industry must not take our youths at fourteen and leave them intellectually at the same place when they are eighteen.

The industrial and commercial education of the working youth is to be a great factor in the future prosperity of our country. The industrial adjustment of high-school and college graduates is a similar problem, but it comes at a later period and is more likely to solve itself.

It is the duty of society to see that opportunity for the boy who works is not denied; that each youth in his chosen vocation may feel the pride of the "man who knows"; that every youth is following some definite form of self-improvement throughout his teens, and that no youth entirely wastes these years in temporary employment.

CONTINUATION SCHOOLS IN BOSTON

Provision for the youth who works must be made in continuation schools. Since September, 1914, every child in Boston between fourteen and sixteen years of age working under an employment certificate has been compelled to attend continuation school four hours per week during working time. Employers are cooperating heartily, organized labor is lending its support, and children are undertaking their studies with enthusiasm. Milwaukee has similar schools under a state-wide act. Pennsylvania is establishing such schools and other states are seriously considering this problem of education for the young worker.

VOCATIONAL SELECTION

A study of the employment of children under sixteen when carefully analyzed indicates that the work of such children is largely confined to errands. When children leave one position and enter another there is change in employer and environment but little change in kind of work. The qualities essential to the success of these young workers relate to reliability, good manners, and personal appearance rather than to specific training in the tasks which they perform. The work of the continuation school in making children more efficient on the present job therefore consists in creating higher standards of reliability, good manners and personal cleanliness and this training is equally essential in preparation for future employment. But success in future employment demands even more. Specific preparation for given occupations is becoming more and more

a necessity. The time of an adult does not permit of specific preparation for success in several callings. A wise selection of vocation made by the end of the adolescent period will save valuable time and keep valuable energy in productive channels. A task of the continuation school then is to aid in the selection of a vocation. Wisdom in choosing a vocation involves a knowledge of those vocations which make appeal. The prevocational classes of the continuation school are intended to furnish a basis for vocational selection. In prevocational classes the child is given opportunity to measure himself against the demands of the calling in which he is interested. If the child is satisfied that his selection is wise he continues his training for that calling and later enters employment in that calling with considerable advantage. If the child doubts the wisdom of his choice, the child is transferred to classes in which he can measure himself against the demands of some other calling. While the child chooses for himself, the counsels of employer, parent and teacher have their relation to his choice. In securing apprentices, employers recognize the desirability of young persons who have based their choice of vocation on more than mere whim and who have already been through a serious trying-out process at the school. The continuation school is finding it easy to place children who have been through such trying-out processes in their chosen callings.

If space permitted the cases of individual children to whom the continuation school has brought remarkable benefits would be stated. There are scores of cases which seemed almost hopeless in which the young worker has been definitely started on the road to economic independence and civic usefulness.

PUPILS' ATTITUDES

To ascertain as nearly as possible the impressions of pupils as to the results accomplished by the Boston continuation school and to learn their real attitude toward the school, a series of questions was answered by over a thousand pupils. Pupils were requested to answer fearlessly, stating what they thought even though it might be unfavorable to the school.

Over 90 per cent. replied that the continuation school has helped them in English and over 85 per cent. that the school had helped them in arithmetic. Replies indicated that nearly 80 per cent. were spending their leisure time in a manner that could be approved. Over 30 per cent. replied that the school had helped them on their present jobs and a like number had received promotions on their present jobs. Over 80 per cent. had been with the same employer since entering the school. Over 85 per cent. asserted that they liked the continuation school; over 95 per cent. liked the continuation school better than the regular day school, and nearly 55 per cent. preferred the continuation school to evening school. Of those employed on a weekly wage, over 90 per cent. reported no deductions because of continuation school attendance. More than two thirds declared that they had a more definite idea of what they would like to be in the future than they had before entering the school.

INVESTIGATIONS

In January of this year the Boston school committee asked the chamber of commerce to appoint a special committee to investigate the continuation school. I quote the conclusion in this committee's report:

> The committee unanimously and emphatically reports that this school ought not to be discontinued. It ought rather to be given better quarters, more support and all possible publicity to the end that it may broaden its operations rather than restrict them.

SOCIETY OBLIGATED TO ALL CHILDREN

The public school should assume its portion of responsibility for *all* children, not only to their fourteenth year, but even to their eighteenth year. Society can not discharge its responsibility for the educational welfare of its children before their eighteenth year. Children under eighteen can not be expected to possess the resources upon which they may be left to stand or fall. The educational welfare of children who go through high school is provided for by the public schools until their eighteenth year. Responsibility for the educational welfare of those unfitted for the conventional school should not be shirked. Training for a trade can be made as effective, as cultural and as valuable to society as training for a stenographer, but it takes a trade school to perform the task. But the majority of those who desire to learn a trade will enter employment at an early age. The needs of these children can be met through continuation schools. Such training will be hardly less effective, hardly less cultural and valuable to society than the training for a bookkeeper, but it takes real vocational training and not merely an extension of the work of the conventional school.

EVENING SCHOOLS

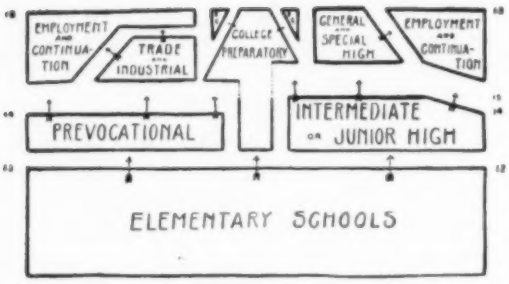
In discussing the education of those under eighteen years of age I have not mentioned the possibilities of evening-school instruction for young workers. Evening schools can be of great benefit to young workers between sixteen and eighteen years of age who are able to add evenings of intensive study to their days of labor, but educational opportunities for this group should not be restricted to evening schools. Evening school is no place for children under sixteen years of age. An important work of evening schools is to provide opportunity for artisans to supplement their knowledge of their own trades through short courses meeting individual needs.

CONCLUSION

The vocational aspect of our early schools was in the training of ministers and teachers. The general education which was adapted to the needs of ministers and teachers has been spread out and applied to all. The work of the regular schools has been well done, but often through no fault of the schools, it has been ineffective. Specialization is well under way in those callings which readily superimpose themselves in academic manner upon the conventional system. Specialization for callings which necessitate the breaking away from the traditional system of general education has been slow in development, but it is now coming upon us with a rush. Trade schools are being established. Society begins to feel its responsibility for the education of the young worker. Compulsory schools for the young worker are in operation in three states. Such schools will multiply with rapidity. The old school system began with all the children and ended with a favored few. It was like a tree from which the fruit fell before maturity. The new school system will begin with all the children and end with all the children, having fulfilled its obligation in democratic manner, having led each child to the highest attainment of which he was capable, both as a worker and as a citizen, through such opportunities as he was able to accept. Tendencies in education point strongly toward such a system.

The diagram (page 878) shows roughly a system such as that of which I speak.

A countryman in the town where the writer was born was once asked what he did in the winter season. He replied with a drawl: "We set and think, and think—and sometimes we jest set." That may



have done for the country farmer in the clearing, but it certainly will not do to-day.

Thought is worthless unless predicated by action. Business has changed, society has changed, and the old education alone is no longer sufficient. We have thought about adding to it; we have made some beginnings; yet much remains to be done. Real progress can be made only when em- come together and, from their respective ployers, workers, parents and educators viewpoints, labor for the common good.

W. Stanwood Field
Director of Evening and Continuation Schools, Boston

SOME PEDAGOGICAL ASPECTS IN THE TEACHING OF THE NATURAL SCIENCES[1]

Our modern philosophy of education teaches us that the true criterion by which we may judge the progress of a civilization is by the manner in which one generation prepares its children to meet the privileges and the responsibilities of the next, in terms of education. And one of the most dominantly controlling factors in man's progress has been his conflict with the forces in his natural environment. A conflict that has opened his senses, quickened his mind and developed his muscles. It has given to man knowledge of nature's secrets and the ability to control and to utilize her forces. The mysteries of her phenomena lie at the very foundations of his philosophies and religion, while he in turn bears the rewards of his successes and failures in brain and brawn, in instincts and desires to record the course of his progress.

Primitive man evolved a vague consciousness of this fact and he taught his children very definitely such modes of interpretation as his superstitious mind could grasp, so that they might be the better prepared to protect themselves in the struggle of life. This training and instruction was given as the immediate situation demanded. It was direct and concrete and it lasted a lifetime.

We may still trace the influences of this training in the practical problems that every child learns to solve in the home, on the farm, in the fields and the forests. It gives to him the foundations of his common sense in terms of which he interprets his life. These common experiences developed such manual dexterity and a respect for those higher virtues which, in that more limited environment, spelled success. And so, while man, trained in nature's workshop, was fleet of foot, skilled of hand and keen of eye, he was non-progressive because his mind had no vision of nature's larger relationships and possibilities. He remained with his body a denizen of the soil and a plodder without a vision.

But as the school developed as a place to which those of leisure might repair to gain culture, a new conception arose. Culture turned away from the common necessities of the immediate to the traditions of the past. Hence, to gain culture was to know the accumulations of man's yesterdays. And the cultured man of the schools of the past has not perhaps lived the largest life, because he despised the physical, the pres- lived the life of the spirit of culture. He ent and the immediate. He thought he

[1] Read before the Northwestern Ohio Teachers' Association, forty-third annual session, Toledo, O., October 29, 1915.

too lacked visions, because he failed to realize life's true relationships.

Nowhere is this conflict of conception better illustrated than in the history of the teaching of the physical sciences in the schools. When these sciences first appeared as subjects in the curriculum nearly a half-century ago, they entered through the door of the classics as natural philosophy. They were "culture" subjects to be learned from books. The great principles and laws of the masters of science, laws which were the culmination of the life work of a Newton, a Davy or a Remsen, were learned by rote by the young adolescent youth with ease while he sat in his bench plotting mischief against the instructor who nursed him into culture. But this method of teaching science from books soon ran its course. A second period came, in which the great principles and laws were illustrated by typical experiments, performed with model pieces of apparatus. While the method of the first period appealed to memory, the second was supposed to make its appeal to a deductive process of reasoning. The laws were learned and then applied to the laboratory model. The purpose of this method is clear. It was to know the laws of nature. But in the centuries of development of the race we have learned that a complete thought process consists of three steps, namely: concrete and definite experiences of facts, generalizations derived from these facts in laws and principles and an application of the generalizations to a new situation. And, since the thought process of the youth is governed by the same principles as are those of the race, he can not stop short by learning the generalizations and gain the greatest benefits to be derived from the sciences. The youth who learns either the facts or the generalizations as mere memory facts without involving the elements of his own daily experiences will make little progress in gaining either knowledge, wisdom or skill. He may pass his grade and graduate with his diploma; but he, like many thousands who graduate from our high schools and colleges every year, will go out a dead coal—having eyes he sees not, ears he hears not the manifestations of the physical world about him. The names of the masters of science arouse only ennui in his mind. The mighty laws of nature that have been forged in the fiery furnace of centuries of progressive thinking, the very crystals of life itself, are but meaningless platitudes as they fall from his inert lips, and they are soon forgotten.

It is a significant fact that in an age that has been distinctly characterized as an age of science, that of the approximately a million students in the high schools of the United States, the percentage of those studying the physical sciences has relatively decreased during the past quarter of a century. This is the more significant when we contrast it with the fact that this has been a period of most wonderful advancement in the applications of science and in the increased expenditure for scientific equipment in the high schools.

We are therefore led to inquire into the causes of these conditions.

Are we, as an age, outgrowing the needs of understanding nature's manifestations and for that reason losing an interest in these subjects? But to this question the entire industrial, commercial, scientific and esthetic world with one accord answer, *No!* On the contrary, we are gradually passing from an age of science to one of applied science and art, in which all of nature's principles will be the more applied to serve man and satisfy his wants. And in this, our men of science tell us, we have but just entered. We are but still in the ox-cart stage of development.

Our problem thus becomes a pedagogical

problem, and, lest we defeat our own existence, we must discover the cause and apply the remedy.

A study of the causes of the relative decline of the physical sciences in the school curriculum reveals two different classes. There are those that are external to the school, and there are those that are internal, within the school conditions themselves.

The first and the most fundamental factor is due to the phenomenal progress of society with its ever-changing economic conditions and social relationship. The home and the school, because they are the more stable institutions, have not been able to adjust themselves to the new demands. The simpler conditions of life in which every child became acquainted with his natural environment are gone. The home of a generation ago, in which the child learned to understand and to utilize some form of nature's forces to supply the family needs, has given way to the community home with its spigot, lever and push-button attachment, the simple manipulation of which will supply every personal and family want from the supplying of the physical necessities to the providing of the highest forms of amusements and recreation. A half century ago domestic, economic and social conditions were such as to throw the child out into a personal conflict with the natural surroundings, to-day he is shielded and protected from them. As a consequence, this leaves the youth, as he grows to maturity, in a barren natural environment; he does not have the personal experiences so necessary for the development of those preperceptions that form the basis of an interest in matters of science. And neither the home nor the school has been able to direct the youth to study successfully nature's principles as involved in the mechanical manipulations about him. Hence, the physical sciences, and, for that matter, any of the sciences, are not popular among the boys and girls of the high schools of this generation. Necessity is not the mother of insight and invention to them.

Our age is an age of applied science, or an age of art. And, as such, it has far outrun the home and the school as educational institutions. This suggests the second cause, the internal, a corollary of the first. The school is still remaining true to its primitive conception, a place for the leisure class or age to learn the subjects suitable for a leisure class in a simpler age than the present.

Superintendent Spaulding, of Newton, Mass., in a school survey put out in 1913 shows the following distribution among the various branches in the high school for every dollar paid out for instruction:

Latin	$.15
French	.11
German	.08
Total language	$.34
Shop work	$.001
Mechanical dr.	.002
Household ec.	.002
Total arts	$.005
Mathematics	$.175
Science	.13
Physical tr.	.05

While these figures may not be representative of the conditions in general throughout the country, yet they are of such suggestive importance as to bear a careful reflection. A single glance will be sufficient to convince the most satisfied conservatist that this is not a just emphasis upon the various branches to meet the needs of the youth whose life interests function in the twentieth century, especially when we remember that it takes less outlay to equip a department in a language than a science or an art.

The conception that still prevails of the function of the high school is that it is academic, a place to learn the prescribed studies,

this based on the Greek theory that man is impelled to act by an intellectual motive. Our schools reflect this conception. The equipment in furniture and text-books are selected upon this principle. The curriculum and the interschool relations suggest it. The field is organized. We feel at home in it. By this method we hear our classes recite what they may have learned; we lecture to them while they give us respectful audience. We check up and report the intellectual progress, and that, as a rule, ends the responsibility of the average instructor. This method lends itself admirably to the ever-increasing numbers of the same classes of students. It may produce the student of books, a recluse, even a scholar of the intellectualistic type; but it can never produce a scientist, an inventor or a mechanic. It may satisfy for the time being the five per cent. class who possess the leisure to study, but it fails to appreciate the fact that the adolescent youth is motivated by impulses much more fundamental than merely to know. It is a serious criticism upon our schools to have our students say: "We see no use in the science work." Our patrons ask us to appeal to the deeper motivations when they ask us to offer their children the work in the applied sciences and the arts. This is the need of organized industry when it establishes schools for the training of its own hands. This is the demand of our age when it calls upon the schools for vocational guidance.

The Associations of the Science Teachers themselves have summarized their own criticisms of their own work as follows:

1. Too much work is attempted in subject-matter in an elementary course in one year.

2. There is too much abstract, mathematical and technical work for the immature minds of high-school pupils.

3. The method of presentation is of greater importance at this age than the selection of subject-matter.

4. The generalizations in definitions and laws should follow, not precede, the presentation of facts.

5. Emphasis should be placed upon the determination of efficiencies rather than upon the verification of laws.

6. The student is not led to analyze in his problem the interrelations of the processes employed, the necessary manipulations of apparatus and the relationships and the results to be derived.

7. Tests of students' work should be that of applying nature's laws rather than the mere statement of the laws.

In view of these conditions and criticisms how can the high school meet them by adjusting its work to function directly in the lives of its pupils and in the needs of its community? How can it meet the needs of the 75 per cent. of those who must go out into the active walks of the arts and industry; those who above all need a vital knowledge of the applications of nature's laws to guide them in the work of their hands, and to prevent their minds from becoming arrested upon the plain of habitude in the rounds of unrequiting toil?

The answer to this question places us upon the very threshhold of a new movement—the third great wave in the teaching of the physical sciences. This wave gives us a new viewpoint. It places the student with his powers and potentialities at the center of operation, and the subject-matter becomes the tool or the instrument in the hands of the instructor with which to meet the needs of the developing youth. This mode of procedure takes stock of the facts and the experiences that the individual may bring to the class and then proceeds to build upon these and to organize them into living motive forces. This is the pedagogical method. It is the scientific. It is na-

ture's method in teaching the race. It never neglects the factors of the immediate, the present. It appeals to the deeper instincts of the soul of the adolescent youth. And the wise teacher will assist the student to gather his facts in our newly constructed homes, our new machines, upon every street, in every shop and industrial establishment. He will also assist the youth in organizing the distinct processes, the mechanical contrivance and the principles of force that are operating, as well as to study possibilities of improvement and the elimination of waste.

In order to meet the demands of this new era in the teaching of the physical sciences, three essential steps must be taken: First, the youth must be led to see the part that the natural forces are playing in his own life comforts and necessities, and in the progress of his age. Second, he needs to see the varied interests that develop with every new discovery of law or of its application in the life of the community. And the third, he must have something of an appreciation of the human factor involved, the biographical or the story of the life sacrifices of the men who discovered or perfected the control of nature's forces for us.

First, the youth must be led to see the part that the physical forces are playing in his own life and in that of his race. Recently the writer was confronted with a problem that involved a physical and chemical process. It was very simple; yet he, as a layman, who had had the elementary courses was unequal to the task. The problem was to solder a copper wire to a brass plate. He tried the ordinary method of muriatic acid, solder and heat without success. He called upon a university professor of physics, and appealed to a professor of chemistry with no relief. As a last resort he took into his confidence a sheet-metal worker who without hesitation gave the process that worked effectively. Perhaps it was not the province of each of these specialists to know about the simple applications of their great fields to the immediate problems of life. Their knowledge of principles was vastly superior to that of the sheet-metal worker. But he made the immediate attachment that brought results. Is not the function of the teacher somewhat different from that of the scientist who knows the laws of nature? Is it not the true function of the teacher to be an artist; one who knows the laws of life; and one who can organize his material so as to permit it to make its immediate attachment in the life of the youth here and now? He must carry the thought process one necessary step further, and place it where the great mass of humanity is living and moving and having its being, where the high-school youth can see the problem and think its significance. Each of these specialists had still retained the academic viewpoint, with emphasis upon the fact of knowledge, and had not raised the question of what to do with it.

The high-school youth, like primitive man, lives in the immediate present; he is an inventor, not a scientist. In order to teach him successfully the instructor must begin with a living problem in his surroundings—the making of a piece of apparatus, the principles of a machine, testing the efficiency of material and processes in shops and factories, testing of articles of food, water, soaps and fuels; comparing the use and efficiency of various substances in the laboratory; examining the nature and values of waste products, etc. Is there any reason that a laboratory, equipped and manned by a community for the purpose of preparing young men and women to live a more efficient life, should not be a community laboratory, in which, with the assistance of the student classes, much of the testing and analyzing may be done? This

plan would serve a double purpose. It would offer the practical problems for work, and in turn it would render services to the community in return for the expenditures it is making under proper and controlled conditions. Every youth of high-school age feels the dignity of contributing something worth while. It would also offer ample opportunity to cover the fundamental principles of an introductory course in science.

Such a course would have a direct bearing upon problems in the physical sciences in the fields of sanitation, housing, engineering, feeding and a host of others that would serve the community and at the same time open to the youth wonderful possibilities for study and investigation. Every science student would become an asset to the community, while he would be doing the best for his own individual advancement.

And this work would not mean the transforming of the science departments into industrial or trades departments. With this point of attack a live instructor can organize the various fields and develop the scientific principles. Neither does it mean a large outlay in increased expenditures for laboratory equipment and stock. The masters of science made much of their own apparatus under circumstances that would hardly compare with the ordinary high-school equipment of to-day. One of the most valuable results in this work is the development of initiative and powers of observation required in planning of problems and equipments and in the securing of the necessary materials for testing.

Second, the youth needs to get a vision of the relationships that scientific discoveries or their applications bear to the age or the life of the community in developing new or ever varied interests. An introductory course in physiography, physics or chemistry should, like all life processes, possess a pulse or rhythm of progress. There is a period in the life of the student as in that of the community when certain great interests are dominant and center upon some scientific achievement. It may be a mechanical interest, a monoplane, an automobile, engines, explosives, electrics, wireless, atmospheric or climatic conditions that will furnish the point of attack. The pedagogy of this fact is apparent. Nor should the differing interests of the sexes be neglected in this matter. Nothing is more pathetic than to see a class of girls whose life interests are functioning in an approaching normal maturity struggling and chafing under the instruction, and in a field that is entirely outside of their age, interest or previous conditions of experience. In many of our cities where the sexes are now being segregated, the verdict is in favor of science work in the fields of girls' life interest. This pulse of life becomes one of the greatest motivating impulses to which the instructor may justly appeal. This impulse will give the vision and incentive to look and plan for the problems and possibilities of to-morrow as he connects up his practical problems with the great principles of science.

Third, after all, the real interests of life are not the material, but the human. A youth of the high-school age has essentially a human interest in things. If he can catch a glimpse of the biography of the men who are doing things, those who have discovered and invented; the conditions under which they labored, the equipment and the methods they employed, the difficulties they surmounted, the disappointments in failures, self-denials and even social ostracisms that many of them had to endure, the triumphs that came with success, the compensation and the relative values derived by society, it would suggest to the

youth a point of contact and a method of procedure. It would also give him an appreciation of life's true relationships and the debt that society always owes to those individuals who have made possible human progress in any field of service. This is an idealism in service that our high-school youth needs to get. It is his life and his religion. It matters little whether he is to go out into the field of the manual arts, or into the professions or business, or whether he is to belong to that other unfortunate class called the leisure class that is living upon the accumulations of the past or the anticipations of the marginal future. All owe an eternal debt to the martyrs who have given up their life blood in the searching after truth and race betterment. How can we bring about this step in our science teaching in the high schools? This is largely a matter of pedagogy. It is not necessary to reorganize the entire field or to rebuild the equipment.

We must, first, as instructors of science, reconstruct our viewpoint from the academic to the life. Our training schools in colleges and universities need to see the larger possibilities of our profession and its relation to the life of the community in training the young people in and for service. In the past our training schools have emphasized the knowledge of subject-matter from the academic standpoint. They have labored under the false assumption that knowledge of the subject alone is all that is necessary in order to teach it. As a consequence our high-school methods to a remarkable degree reflect the university practises. The high-school instructor must respond to the third great step in the teaching of science and step out of the classroom text-book and into life for his material with which to direct his pupils. The textbook may guide him, but it can do no more. The facts must come from the life experiences and the world of things. These the imagination can not supply.

Second, we must realize that the community interests are ready to receive us and to cooperate with us. The school as a social center makes it a possibility for the teachers of science to meet the managers of the various industrial institutions, to devise plans and means by which the responsibilities between the school and organized society, between the theoretical and the practical, may be affected. This does not mean that the science departments are to become trades departments. It does, however, mean that the schools and the institutions of organized society, like the apprentice masters of former days, shall together assume some responsibility toward the youth as he passes from his course in school out into the various walks of life. The school, through its departments of science and arts, must acquaint him with the manifestations of his physical world in theory and application, and managers of industry and professional life, as representing organized society, must be prepared to receive him. The time is not far distant when the schools, through their science departments, will be such an integral part of its community life that they may operate and be instrumental in directing the various activities in raising the efficiency of the various arts and crafts in which these sciences function.

And finally, the high schools must cease to be impelled by a desire to merely meet the requirements of admission to the higher institutions of learning. It is true, they do prepare the youth for college. And, important as that may be, the pedagogical principles underlying their function are much larger. The course offered for a college preparatory course may or may not be the best course. Judging from the criticisms of the science teachers themselves, it has not been in the past. When we shall

get our proper pedagogical bearings, we shall see that just as one age in the child's life when lived normally and completely will best prepare him for the responsibilities of the next, so the course, arranged to develop the powers and possibilities of body and soul to their fullest in one age, will best prepare him to serve the life of the next. And it will thus in the highest sense articulate with the courses in the institutions above. That is all that the colleges and universities have a just right to demand of the high schools as a prerequisite for entrance courses. "To ask for more," says David Starr Jordan, "is an impertinence."

A. W. TRETTIEN

TOLEDO UNIVERSITY

THE DISCONTENT OF BILL AND JIM

WHY the discontent of Bill Smith and Jim Jones? Bill works in a cotton-mill and Jim sews uppers in a shoe-factory. Considering the amount of muscular or mental exertion required, both get fair wages; fifty years ago they would have considered themselves lucky to get half as much. Then, why this discontent? Both belong to a union and are constantly breathing forth dark threatenings of going on a strike. They go to work scowling and come home out of sorts with the world. The half holiday they have every Saturday is spent in listening to the harangues of socialists or anarchists in the market place or saloon. Perhaps they get drunk, and Sunday morning Mrs. Smith and Mrs. Jones appear with sundry bumps and blacked eyes, thus proving to the neighborhood that there has been a pretty close attachment between husband and wife. In their sober moments, Bill and Jim see but two classes in all the world—the downtrodden laboring man and the tyrannical rich. In these modern days are not Bill Smith and Jim Jones fast becoming dangerous citizens?

If I should ask the two gentlemen the reason of their ferocity doubtless they would snarl: "The wages—the starvation wages—the pay is too small—the hours are too long!" Bill and Jim, deep down in your hearts you know that this is not the fundamental cause. Your income may not be as large as you could use; but, based on the actual labor, physical or mental, required, it is far more than the world ever allowed before. Does sewing those shoes require the strength of a real man? Does not the machine furnish most of the skill? Could not any boy keep the threads running in that almost human spinning machine that whirs before you all day long? No, my two friends, it is not mainly the question of wages that fills your hearts with angry passions. If you were paid for the same job five, ten, aye, twenty times as much, yet would you be sulky this morning, mad to-night, and itching to go on a strike to-morrow. Still would you speak of the tyrannical rich. Still might your wife's Sunday morning face be adorned with numerous and abnormal protuberances.

No; there is another reason, deeper, subtler, far more dangerous. And it is this: *You create nothing.* You have lost the one thing that makes life bearable. Think you that you are alone in your longing, your sulkiness, your murderously envious heart? Not so, Bill and Jim. The idle rich feel these, also. That man who flashed by you in his automobile this morning will this day risk his neck in a race; this afternoon he will lounge in his yacht and wish for the thousandth time that there were something new under the sun; to-night, seeking it, he will drink champagne with the ballet girl; and to-morrow his wife, who also longs for something new under the sun, will sue for a divorce—and alimony. Yonder clerk who weighs out sugar or sells neckties goes his weary round

in the same treadmill and will at length become atrophied in body, mind and soul. Yonder girl, monotonously pasting labels in the box factory, flashes savage glances at the passing multitude or else, in sheer desperation, sends an insinuating grin at the gaily dressed dude who stops before her window. Bill and Jim, all these are suffering with you the same slow torment; they have relinquished their one God-like attribute—*the power of creation.*

All day, Smith, you stand in front of the spinning machine and see the threads speed by you. You see not whence they come or whither they go. Your one task, day in and day out, is to watch thousands of yards of thread reel past you. You, Jones, have certain portions of shoes dumped down before you, and your task until death calls you is the monotonous one of poking them at a machine and seeing that it sews them together. You never see the beginning of that shoe; you never see the end. When the whistle blows and with a curse you take down your hat and dinner pail and saunter homeward, you can not stop a friend and say boastfully, "See, man, I made this pair of shoes." "I made this yard of cloth." No, Jones, you have worked in this shoe factory twenty years and yet have not the slightest idea how to make a complete shoe. And as for you, Smith, if a hundred pounds of raw cotton were put before you, you would be in despair as to how to make a piece of that cloth which to-morrow yonder merchant will pronounce "all wool." In all this score of years, Bill and Jim, you have never produced *an entire thing.* Heavens, friends! how have you kept sane all this time?

In your fathers' time it was different. The old man took a chunk of iron and heated it and hammered it until his sweat sprinkled the anvil; but lo! that day he came forth smiling from his sooty shop with a thing created—a horseshoe—*a created thing,* of which he was as proud as ever Raphael was of a painting in the Vatican. It was, at best, but a fair horseshoe; that Pittsburgh factory makes a barrelful of better ones in the same time that he made one. *But he made it himself*—from chunk of iron to finished product. And he lived long and happily, because daily he felt the joy of God in creating. Go ask that scowling fellow in the Pittsburgh factory why he glowers at the machine monotonously curving pieces of iron or punching holes through the shoe; ask him if he expects to live long and happily; ask him, if you dare, just how much joy is his in curving iron or punching holes. Surely, Bill and Jim, this modern machine-world, enormously productive as it is, is full of discontent and murderous envy and heart-weariness, and other attributes of Hell. Surely its vast productiveness demands human souls for toll.

Yes, friends, it was very different in our fathers' time. The old negro mammy who picked a basket of cotton, and combed it out, and spun it, and sewed it into a dress wonderful in gaudy colors felt more of the just pride of a god than the white woman who stands before the factory-loom to-day. I am told that now thirteen people work on a needle. One punches an eye in it. A glorious occupation for a life-time! One sharpens the point. A divine work! One smooths it off. A soul-thrilling profession! Is it any wonder that Mary, who punches the eye, and Ann, who sharpens the point, rush out to-night to the park or beer garden, and in a wild burst of freedom dance with the Gentleman Jack-a-Napes and drink with him, and the next morning wake to find themselves ruined? And the Reverend Mr. Highly Orthodox, D.D., damns her as a lost woman and tells her to

become a Christian and go on punching needle-eyes, while my Lady Idle Rich, who is suing her husband for a divorce and alimony and "something new," thinks it shocking how careless these working girls are becoming! Bill and Jim, I fear that if the Reverend Mr. Highly Orthodox and My Lady Idle Rich had to thrust pieces of leather at a machine or watch flying threads for twenty years they too would be seeking stimulants and joy rides and Gentleman Jack-a-Napes, and "something new."

Surely we of this industrial age may cry unto God, "What shall we do to be saved?" We can not return to the old ways of producing; the millions would go starving and naked. We can not go on in the present way; for the soul of the worker is dead or on fire or driven by its very suppression to riotous sin. Not one modern laborer in ten thousand feels himself an instrument through which God speaks. "Blessed is he who has found his work; let him ask no other blessedness." But how few have found their work! This man sews shoes because it pays more than punching needle-eyes; if needle-eye punching paid more than shoe-sewing he would at once change his job without the least regret. Bill and Jim, you can not be blamed, but surely this is not the spirit of a Raphael or a Michael Angelo. Think you Raphael paid any attention to an eight-hour day? No; when he created that marvelous Sistine Madonna he worked from sunrise to sunset, and doubtless fretted that darkness came so soon. Think you, Bill and Jim, that that medieval laborer, Michael Angelo, went on a strike while painting the ceilings of the Vatican? No; tradition tells us that up there on the scaffolding he worked with such unresting zeal that for years after the labor was completed his neck was twisted far back toward his spine. Bill and Jim, have you ever seen the task that you loved with such ardor? No; not until you create a thing—*create*, remember, from start to finish—will you ever feel the rapture of labor; not until you feel the god-like power of expression speaking through your skill will you realize why the artist lives and dies for his work, heedless of reward, heedless of union wages and union hours, heedless of all save the voice within him crying for a visible form. Then, and not till then will the anvil-chorus of mere labor become the hallelujah-chorus of creation.

Bill and Jim, you have never been to college; but if you had, you would have found the same lassitude, the same grind, the same disgust, the same lack of creative opportunities, and, alas, the same inevitable outbursts of reckless vice. The same causes bring the same results, whether in college or in factory. What yawning, what stretching of arms and legs while Professor Dryasdust waxes classic over the glories of Homer! What nodding and folding of the hands in sleep while Professor Highbrow waxes romantic over the beauties of Tennyson! Five hours each day, five days each week, nine months each year, these youngsters with blood at fever-heat, longing to produce something tangible or at least something expressive of their own souls, have learning poured into them, unwilling as they are, until, like you, Bill and Jim, their spirits grow rebellious, or, what is worse, callous and dead. It is not the fault of Professors Dryasdust and Highbrow; the public, which hears them only once or twice a year, thinks them eloquent speakers. Under the circumstances, Demosthenes and Cicero, returned to the flesh, would bore these restless youngsters. Think what a marvelous change an hour of handwork between each hour of purely mental work might bring about! I can sympathize with that student who, after

listening to lectures from eight to twelve, went to compulsory chapel, and, on hearing a professor begin a sermonette on Isaiah, muttered to his seatmate, "Oh, damn Isaiah! I'll match you for a half-dollar."

Whether in school or workshop, we are not giving men an opportunity to create. Hence the yawning, the stretching, the folding of the hands in sleep. Hence the walking delegate, the striker, the anarchist. Every man has in him some one talent, and no machine, though it produce a hundred shoes or a thousand yards to his one, can ever satisfy the half-conscious longing of that talent to express itself.

Luckily, you, Bill and Jim, in a crude, dim sort of way, are feeling toward some solution of the problem. You send little Bill and Jim to school, and, as taxpayers, you demand some labor for the hands as well as for the brain. The colleges, with petrified ideas, declare that little Bill and Jim may not enter the classic walls unless they have studied this or that dead thing; but you, the fathers, say the same thing about the colleges that the weary student said about Isaiah; and the purpose of God goes on, in spite of the efforts of college faculties to instruct Him as to the needs of the human soul. Of course, in your crude, bungling way, you make mistakes; you see, you have so long allowed machinery to do your thinking for you that you can not but bungle. You demand that handicrafts be put into the schools for commercial results, for mere money-making, when that is the very purpose for which we don't want them there. If money-making were the point, any machine could turn out the wicker baskets, the rush mats, the crude carvings, a thousand times more speedily than these hesitating youngsters. No, Bill and Jim, it is for *expressive* purposes that those workshops are there; to let each soul in each little body give the spirit something to relieve itself with in hours of soul-fag, to grant unto man the use of the greatest gift the Creator has given him—the ability to show in concrete form the bit of the Universal Personality possessed by him.

Even the Master Laborer delights to express himself in his work. "The heavens declare the glory of God; *the firmament showeth His handiwork.*" Bill and Jim, we all need a little more opportunity to display the God in us.

Carl Holliday
University of Montana

EDUCATIONAL EVENTS

EDUCATIONAL LEGISLATION

The Bureau of Education reports laws to have been enacted in Massachusetts, Rhode Island and Virginia, as follows:

MASSACHUSETTS

An act to permit the graduates of certain schools ("designated professional or vocational school") to organize fraternal benefit societies without the lodge system.

An act to authorize certain military organizations of students to drill and parade with firearms. . . . Applies to approved student organizations.

An act relative to the retirement of teachers and other employees in training schools maintained under the direction of the state board of education. . . . Provides for pensions for such teachers and employees under the existing state law.

An act relative to refunds to members of the teachers' retirement association who withdraw from the service of the public schools. . . . If teacher withdraws before six annual assessments have been paid, the total amount which such teacher is entitled to have refunded may be paid to him in one sum; after six assessments have been paid, the amount so refunded shall be in the form of annuity for life based on the contributions of such teacher, together with regular interest thereon, or in four annual instalments, as such member may elect.

An act relative to the employment of certain minors in the summer season. . . . Permits the employment of minors between fourteen and sixteen years of age in vacation time.

An act to exempt certain illiterate married women from compulsory attendance at evening schools. . . . Illiterate minor not required to attend if a married woman.

An act relative to cooperative courses in public schools and to employment of pupils in cooperative agencies. . . . Permits children between fourteen and sixteen years of age who are in cooperative courses to be employed for part time by cooperating agencies.

An act relative to the registration of minors.—City and town school committees required to ascertain name, age, etc., of every child between five and seven, between seven and fourteen and between fourteen and sixteen years of age and of minors over sixteen years of age who can not read and write. A card shall be kept for every such child or minor. Attendance officer shall examine such cards and see that children attend school. Supervisory officers of private schools shall within thirty days report enrollment of children of compulsory age, and when such child withdraws from school shall report the same within ten days.

An act to make the first day of January, known as New Year's day, a legal holiday.

An act relative to the construction of buildings in the county of Hampden for a county training school. . . . Increases maximum cost of such buildings from $100,000 to $140,000.

RHODE ISLAND

Age and employment certificates may be issued only upon the written request of a prospective employer, and shall be returned to the issuing office when the child loses employment. The certificate is no longer the property of the child. The act aims to improve the administration of compulsory attendance laws.

Increases salaries of two physicians employed to examine children for age and employment certificates in Providence from $750 to $1,200 each.

An appropriation for state-free scholarships at the Rhode Island School of Pharmacy.

Increases appropriation for state aid for towns supplying certain school apparatus from $4,000 to $4,500.

Changes name of Rhode Island School for Feeble-minded to Exeter School.

No member of a school committee shall be eligible to election as superintendent of schools.

VIRGINIA

To provide for the appointment of a special joint committee on publications. . . . And to further consider and report the feasibility of printing and publishing any of the text-books used in the public schools of the state.

To provide for the collection of delinquent capitation taxes, past due three years or more, by collectors to be appointed by the judges of the courts of the commonwealth and to fix the compensation of such collectors.

Allowing (under certain conditions) district or county school boards to provide free school books for children attending the public schools and instructing county boards of supervisors and city councils to provide the necessary revenue. . . . Books furnished if proposition carries by majority vote at an election.

Amending Chapter 252, acts of 1906, as amended, authorizing the several school boards of the school districts in the state to borrow money belonging to the literary fund (state permanent school fund). . . . Authorizes school boards to borrow such fund for enlarging (as well as erecting) schoolhouses. Increases from $10,000 to $15,000 the maximum amount of any one loan, but amount of loan shall not exceed two thirds of value of school property on which borrowed. On loans not exceeding $3,000, interest at 3 per cent.; exceeding $3,000, interest 4 per cent. Loan a lien on school property.

Empowering the school board of the city of Norfolk to select and purchase text-books direct from the publishers.

Amending Section 2, Chapter 322, Acts of 1914, creating the Virginia normal-school board. . . . Empowers said board to "confer appropriate degrees in education upon students completing courses in the institutions under their charge."

Relating to annual statements of receipts and disbursements by county and district school boards. . . . Minor amendment as to reporting incidental expenses.

Amending Section 1,437 of the Code, relating to the division superintendent of schools, his appointment, term of office, vacancy and qualification. . . . In event state board of education fails to elect such superintendent before April 1 of year of election, incumbent may hold for succeeding four years; if board is unable to elect, it may attach division to an adjacent division. Such superintendent must have held a teacher's license equivalent to first grade, or held the office of division superintendent, or must have taught number of years designated by said board.

To make it unlawful to use the common or "roller towel" in any hotel, railway train, railway station, public or private school, public lavatory or washroom.

An act to authorize and empower the board of supervisors of any county to appropriate out of the general funds of said county to the public schools thereof a sum not to exceed 25 per cent. of the amount collected for county purposes during the next preceding year.

THE TEMPORARY APPOINTMENT OF TEACHERS IN NEW YORK CITY

State Commissioner of Education Finley has announced, as we learn from the New York *Sun*, that the temporary assignment of teachers to fill vacancies in the elementary grades of the schools of the city of New York for periods of one year or more is not in accord with sound educational policy.

The board of education and other school authorities of the city whose duty it is to provide for the appointment of teachers should forthwith take the necessary official action in the manner provided by law and the regulations of the board to fill such vacancies by the permanent appointment of duly licensed teachers, the commissioner holds.

The case is that of Anna R. Pettebone, who is the holder of a teacher's license for promotion, which authorizes her to teach in the grades of the seventh and eighth years in the elementary schools. She was appointed as a teacher in one of the sixth grades of such schools.

She complains of the action of the board of education in adopting a resolution which provides for the transfer of teachers of special subjects to work in the grades of the elementary schools, so far as such transfer resulted in the filling of vacancies in the grades of the seventh and eighth years of such schools. If such vacancies were so filled the appellant will be deprived of permanent appointment from the list containing the names of the teachers holding the license for promotion.

The question as to the validity of the transfer of kindergarten teachers and teachers of special subjects to positions in the grades of the elementary schools has already been disposed of in an appeal recently decided by the commissioner, in which it was held that so much of the resolution from which Miss Pettebone appeals as authorized or provided for the transfer or assignment to the positions of regular teachers in the elementary schools of teachers of special subjects who do not hold a license or certificate authorizing them to teach as regular teachers in the grades of such schools was illegal and therefore void.

It appears that for a considerable time vacancies in positions in grades of the seventh and eighth years of the elementary schools have been filled temporarily by teachers transferred thereto from positions in the lower grades. Many of these teachers hold promotion licenses authorizing them to fill permanent positions in such grades.

When transferred they were required to waive all claims for salary paid to teachers in such vacancies. Many of these teachers have been retained in their positions under such temporary assignments for two or more years. The by-laws recognized the policy of filling such vacancies from eligible lists containing the names of teachers possessing licenses for promotion.

Schedules of salaries are prescribed whereby teachers in such positions are entitled to an increase in compensation. The qualifications prescribed by the by-laws for such positions indicate that greater experience is required of those who fill such positions.

The commissioner of education determined that in recognition of the policy of permanently filling such vacancies by the appointment of teachers possessing special qualifications the board of education should immediately provide for the permanent appointment of qualified teachers to such positions and that the board of estimate and apportionment and the board of education should take such action as may be necessary to provide funds for the payment of the salaries of such teachers.

DEPARTMENTAL CONFERENCES AT THE CELEBRATION OF THE QUARTER-CENTENNIAL OF THE UNIVERSITY OF CHICAGO

One of the notable and significant features of the celebration of the Quarter-Centennial at the University of Chicago from June 2 to June 6, inclusive, was the Departmental Conferences held on the afternoon of June 5, and the morning of June 6.

According to the program the conference of the philosophical and social science groups and the Law School considered the general subject of "Problems of National Progress" and the speakers were Irving Fisher, professor of political economy in Yale University, and Roscoe Pound, Carter professor of general jurisprudence and dean of the law school at Harvard University. At the departmental dinner, Frederick Jackson Turner, professor of history at Harvard, was the speaker. The conference of the department of household administration included a discussion of "The Significance of the Home" by Mrs. May Willcox Glenn, of New York City, who was formerly president of the National Conference of Charities and Corrections; and at the conference of the philological group Kirby Flower Smith, professor of Latin in Johns Hopkins University, and Irving Babbitt, professor of French literature in Harvard University, gave addresses.

Three speakers addressed the conference of the departments of mathematics, astronomy and astrophysics, and physics—George Ellery Hale, director of the Solar Observatory of the Carnegie Institution of Washington, Mount Wilson, California; John J. Carty, chief engineer of the American Telegraph and Telephone Company; and Edward Burr Van Vleck, professor of mathematics in the University of Wisconsin. In the conference of the department of chemistry, six graduates of the University of Chicago took part, and one of the most appropriate features of the conference was the presentation of a portrait of the late Professor John Ulric Nef, for many years the distinguished head of the department, and also the presentation of the plans for a John Ulric Nef memorial volume. The speakers at the conference included representatives of the universities of Chicago and Cincinnati, Harvard University, the Carnegie Institution and the University of Texas.

In the conference of the departments of geology and paleontology, and geography, the addresses were given by John Casper Branner, president emeritus and former professor of geology, at Leland Stanford Junior University, and John Mason Clarke, state geologist and paleontologist, and director of the State Museum and Science Department, University of the State of New York, who spoke on "Civic Ideals in Geology." William Morton Wheeler, professor of economic entomology and dean of the Bussey Institution, Harvard University, discussed "Bergson's Philosophy of Instinct as viewed by an Entomologist" before the conference of the biological group; and in the conference of the experimental medicine group the speakers included William Henry Welch, Baxley professor of pathology in Johns Hopkins University, Ernest Edward Irons, assistant professor of medicine in Rush Medical College, and David John Davis, professor of experimental medicine in the University of Illinois.

Among the speakers in the conference of the classical group were Berthold Louis Ullman, professor of the Latin language and literature in the University of Pittsburgh; William Arthur Heidel, professor of Greek in Wesleyan University, Middletown, Conn.; and George Norlin, professor of Greek in the University of Colorado. The department of Romance languages and literatures had at its conference the following speakers: Professor George Tyler Northrup, of the University of Toronto; Isabelle Brink, of Swarthmore College, and Professor Earle Brownell Babcock, of New York University. In the conference of the department of Germanic languages and literatures the two speakers will be Professor Otto Heller, of Washington University, St. Louis, Missouri, and Assistant Professor Leonard Bloomfield, of the University of Illinois.

The Doctors of Philosophy of the departments of mathematics, astronomy and astrophysics, and physics presented papers at the conference of the departments, and one of the notable features of the conference of the departments of geology and paleontology, and geography, was the presentation of a portrait, painted by Ralph Clarkson, of Professor Rollin D. Salisbury, head of the department of geography and dean of the Ogden Graduate School of Science.

Professor William Albert Locy, of North-

western University, Professor Michael Frederic Guyer, of the University of Wisconsin, and Professor Robert Kirkland Nabours, of the Kansas State Agricultural College, gave demonstrations and papers before the conference of the departments of zoology, anatomy and physiology; and in the conference of the department of botany the speakers, all of whom are graduates of the University of Chicago, were Professor George Harrison Shull, of Princeton University; Professor Burton Edward Livingston, of the Johns Hopkins University, and Professor Frank Lincoln Stevens, of the University of Illinois.

EDUCATIONAL NOTES AND NEWS

THE nomination of Mr. Hughes by the Republican convention makes it inevitable that the next president will be a former university professor.

PRESIDENT ABRAM W. HARRIS, of Northwestern University, has been elected to the secretaryship of the Board of Education of the Methodist Episcopal Church.

CALVIN N. KENDALL, state commissioner of education, New Jersey, has been re-elected for a term of six years.

PROFESSOR CHARLES HUBBARD JUDD, director of the School of Education at the University of Chicago, has been given charge of the survey of the school system of St. Louis, the school board of that city having appropriated $10,000 for the purpose. Dr. Judd has already announced the personnel of the staff to assist him in making the survey, and it includes Dr. Frank N. Freeman, assistant professor of educational psychology in the University of Chicago; John Beach Cragun, instructor in music at the University High School; William Scott Gray, of the Department of Education; and Dr. J. Franklin Bobbitt, associate professor of school administration. Dr. Freeman's subject of investigation in the survey is penmanship; Mr. Cragun's, music; Mr. Gray's, reading; and Professor Bobbitt's, the course of study in related topics. Dr. Judd expects to make at least partial reports of the results of the survey before the opening of the schools in September.

RAYMOND A. KENT, from the faculty of the University of Minnesota, has been elected superintendent of the Lawrence (Kans.) schools. The board of education and the University of Kansas will work together in the supervision of the schools. Lawrence will pay $2,500 of Superintendent Kent's salary, and the university, $1,500. In return for this additional salary the superintendent will lecture in the School of Education and in the summer school. Superintendent Kent is a graduate of Columbia University.

BISHOP JOHN W. HAMILTON, of the Methodist Episcopal Church, has been elected chancellor of the American University, Washington, to succeed his brother, Franklin Hamilton, who resigned recently.

FREDERICK A. GOETZE has been elected treasurer of Columbia University by the trustees, succeeding the late John M. Nash. He will retire from the deanship of the Schools of Applied Science.

PROFESSOR C. J. KEYSER, of Columbia University, and Professor M. W. Haskell, of the University of California, will exchange professorships during the first term of 1916–17.

DR. JEAN PICCARD, of the University of Lausanne, Switzerland, has been appointed assistant professor of chemistry in the University of Chicago, beginning with the autumn quarter of this year. It is interesting to note that Professor Piccard is of the same nationality as the late Professor John Ulric Nef, who for more than twenty years was the distinguished head of the department of chemistry at the University of Chicago.

DR. GEORGE SARTON, of Ghent, editor of *Isis*, has been appointed lecturer on the history of science at Harvard University. In the academic year 1916–17 he will give two courses, one on "The Origin and Development of Greek Science" and the other on the "Principles of Mathematics Historically Considered." He will also lecture on the history of science at the Lowell Institute in Boston.

DR. GEORGE W. CRILE, of Western Reserve University Medical School, has received the

honorary degree of doctor of letters from Wooster College.

REV. DR. GEORGE B. LAWSON, principal of Vermont Academy since 1908, has announced his resignation.

MR. R. L. DICKINSON, engaged in community Y. M. C. A. work at Cedar Falls, has been elected instructor in mathematics and surveying at Iowa State Teachers College for the coming year.

C. W. MARSHALL, for sixteen years principal of the Amherst (Mass.) High School, has resigned to accept a position as teacher of Latin and English in the high school of Northampton. Mr. Marshall is an Amherst graduate, class of 1888.

DR. WILLIAM PALMER LUCAS, San Francisco, professor of pediatrics in the University of California Medical School, has gone to Europe to aid in the organization of children's work for the American Commission for Relief in Belgium.

PROFESSOR AUGUST VON WASSERMANN, head of the Royal Institute for Infectious Diseases at Berlin, will become director of the Institute for Experimental Therapy at Frankfort, in succession to the late Professor Paul Ehrlich.

MISS ISABELLE A. ENNIS has been elected president of the Brooklyn Teachers' Association. Of a total of 4,187 votes cast Miss Ennis received 1,972. Henry C. Moore was given 1,297 votes, and Oswald Schlockow received 918 votes. Those elected to serve with Miss Ennis during the ensuing year were: Miss Jennie M. Jermess, first vice-president; Miss Rose M. Granger, second vice-president; Wm. Elbert, recording secretary; Miss Craig, corresponding secretary; and William E. Reed, treasurer.

WITH the moving of the Johns Hopkins University to Homewood the psychology department will be divided. Part will be established under the direction of Professor Dunlap, in three finished rooms and some of the eave spaces in the attic of the academic building, while the other part, under the direction of Professor Watson and Dr. Lashley, will be moved to the psychological laboratory of the Phipps Psychiatric Clinic at the medical school. The Phipps Clinic has been supplied with space for a laboratory of psychology ever since it was built, but this laboratory has never been used.

THE increasing interest in the Spanish language, due in part to the growth of Pan-Americanism, has led the University of Vermont summer school to add to its offerings two practical courses in Spanish, which will be given by Professor Charles Underwood, of Simmons College.

HEREAFTER graduates who have completed a full four-years' course in the University of Cincinnati, the last two years of which have been spent in the College for Teachers, will receive the degree of B.S. This degree will entitle the holders to state teachers' certificates and admission to the graduate school as candidates for the A.M. degree on a parity with those who hold the A.B. degree. A good many students of the university contemplate taking the B.S. degree in four years and the A.M. degree the fifth year. Otherwise those who expect to teach must spend four years in completing the requirements for the A.B. degree in the college of liberal arts and an additional year in the College for Teachers, in order to qualify for a state certificate and for the preferred list from which Cincinnati teachers are appointed. The fifth year's work does not count toward an A.M. degree, except for those who are qualifying for high-school positions.

OF the more than 600 degrees awarded by the University of Missouri the teachers' college leads in graduates this year, having 180; the college of arts and science is second with 159; college of agriculture, 93; graduate school, 90; school of engineering, 60; school of law, 24; school of journalism, 19, and school of commerce, 5. Last year the college of arts and science led with 132 degrees. The school of education had 84; college of agriculture, 83; graduate school, 49; school of journalism, 19; school of law, 17; school of engineering, 19; school of commerce, 1. Besides the 630 candidates for degrees, 227 students are applying for certificates. Eighteen want two-year cer-

tificates in medicine; 3, nurses' certificates; 56, two-year certificates to teach; 105, life-certificates to teach.

THE conference on international relations for university students which will be held at Western Reserve University from June 21 to July 1 will be under the auspices of the Federation of International Polity Clubs of Boston with the cooperation of the World Peace Foundation, the Carnegie Endowment for International Peace, the Church Peace Union and Western Reserve University. Among the speakers will be Secretary of War Baker, Frederic C. Howe, commissioner of immigration at the port of New York; Dr. James Brown Scott, secretary of the Carnegie Endowment for International Peace; Rev. Frederick Lynch, secretary of the Church Peace Union; Herbert S. Houston, president of the Associated Advertising Clubs of America; George W. Kirchwey, warden of Sing Sing Prison and president of the American Peace Society; Senator Henri LaFontaine, of Belgium; Professor Shailer Matthews, of the University of Chicago; John Barrett, director general of the Pan-American Union; Senator Fall, of New Mexico; Professor William I. Hull, of Swarthmore; Dr. G. W. Nasmith, of the World Peace Foundation, and Professor Albert Bushnell Hart, of Harvard University.

AMONG the leading speakers at the first annual Better Community Conference to be held at the University of Illinois from June 20 to 22, will be Mr. Carl Vrooman, assistant secretary of agriculture; Mr. Harry A. Wheeler, member of the Chicago Association of Commerce; Mr. Lorado Taft, the sculptor of prominence and an alumnus of the university, and Dr. Shailer Matthews, of the University of Chicago. A special feature of the exercises during the conference will be the installation of the name of Mr. B. F. Harris in the Illinois Farmers' Hall of Fame. Mr. Harris was a prominent farmer, stock raiser and capitalist during the last decades of the nineteenth century.

COLUMBIA UNIVERSITY will hold a conference on classical studies during the summer session. This conference will begin on July 11 and close on July 24. It will consist of lectures by two distinguished classical scholars, and of conferences with the students who are interested in the study of the classics. The lectures will be given every week-day afternoon from July 11 to July 24, except Saturday, between 3.30 and 4.30 P.M., by Professor Paul Shorey, and between 4.30 and 5.30 P.M., by Professor Gilbert Murray. On the evenings of Monday, July 17, Wednesday, July 19 and Friday, July 21, conferences will be held at which both Professor Gilbert Murray and Professor Paul Shorey will speak.

THE fiftieth anniversary observance of the founding of Lehigh University included a large alumni celebration on June 3 and special commencement exercises held on June 6. Lehigh's history was sketched in the alumni address delivered by Dr. Henry Sturgis Drinker, a graduate in the class of 1871, who was for many years a trustee and since 1905 has been president of the university. Honorary degrees were conferred upon four Lehigh alumni as follows: Doctor of Letters, Mark Antony DeWolfe Howe, Jr., B.A., '86; M.A., of Boston; editor of *The Harvard Alumni Bulletin*, and formerly of *The Atlantic Monthly* and the *Youth's Companion*. Lehigh University was founded in 1866 by Asa Packer, a pioneer in railroad and transportation activity in this country, who built the Lehigh Valley Railroad. His endowment of the university amounted to about three million dollars, said to be the largest donation by one American to the cause of education up to that time. The student body of the first year numbered forty young men from four states and one foreign country. In 1916 there are 775 students, representing thirty states and twelve foreign countries. Including extension-course students, Lehigh's enrollment is 1,060. The teaching staff has grown from seven in 1866 to seventy-eight at this time. There is now a campus and park of more than 160 acres, with twenty buildings, a stadium and an additional playing field. The alumni body, including graduates and non-graduates, representing Lehigh in all parts of the world, numbers about 6,000.

AT the DePauw University commencement on Sunday, June 3, the baccalaureate sermon was delivered by the Reverend Bishop William O. Shepard; the commencement-day address was by the Reverend Doctor S. Parkes Cadman, of Brooklyn, N. Y. The degree of doctor of pedagogy was conferred upon Mr. William A. Wirt (class of 1898), of Gary, Indiana. Gifts to permanent endowment and new buildings amounting to $244,000 were announced. Of this $50,000 was from the Studebaker brothers, of South Bend, Indiana, for an administration building and $100,000 from Mr. Edward Rector, of Chicago, for a third dormitory for women.

JEFFERSON MEDICAL COLLEGE, Philadelphia is now ninety years old. It has graduated 13,278 physicians, of whom 4,678 are in active practise. Last session 676 students were enrolled. The real estate and the equipment are valued at over $2,000,000. A movement has been inaugurated to secure, as soon as possible, at least $2,000,000 additional endowment for the college. Mr. Daniel Baugh, a member of the board of trustees, and founder of the Daniel Baugh Institute of Anatomy and Biology, has subscribed $100,000, provided an equal amount is raised at once.

DR. CHARLES J. HART, of Philadelphia, president of the Alumni Society of St. Paul's School, has announced that the sum of approximately $200,000 has been raised by the alumni as an addition to the endowment fund, bringing the total close to a million dollars. The money is to be presented during the commencement exercises on June 7 and 8, which dates also will be marked by the celebration of the school's sixtieth anniversary.

JUDGE GEORGE, of the Probate Court, has allowed the will of William S. Murphy, leaving $45,000 to Harvard College to found scholarships for young men named "Murphy" who might desire a collegiate education. The contestants of the will withdrew their opposition. Mr. Murphy, who for many years was a clerk in the surveyor's office at the Custom House, was graduated from Harvard in 1885. He never married and had no immediate kin. Several cousins gave notice of their intention to make a contest but conferences with them resulted in a settlement for about $5,000.

AMHERST COLLEGE has accepted from the widow of the late Dr. Edward H. Crane $35,000 in full settlement of the legacy to the college library, recently announced. The balance of the estate, $40,000, will go to Mrs. Crane's heirs.

BOWDOIN COLLEGE has received $10,000 for a library fund for the Hubbard Library from Frederick C. Appleton, '64, Bangor, in memory of John J. Appleton, '60.

DR. THOMAS UPHAM COE, of Bangor, has given Bowdoin College $27,000 to build an infirmary, which it is said he will endow.

AT the annual meeting of the Alumnæ Association of Abbot Academy, Andover, Mass., held in connection with the commencement exercises, announcement was made of the plan for a memorial gateway to honor the name of Miss Maria S. Merrill, teacher of French at Abbot Academy for nearly thirty years, whose death occurred at Portland, Me., on March 30. Since the first of May more than $2,000 has been pledged for the purpose.

AT the twentieth commencement exercises of Barnard School for Girls, New York City, Dr. Virginia C. Gildersleeve, dean of Barnard College, Columbia University, addressed the graduates. At the conclusion of the address Mr. Hazen, on behalf of the Alumnæ Association, presented to Miss Gildersleeve for the college a fund of $4,000 raised by the school alumnæ to found a scholarship at Barnard College. This scholarship is to be known as the Barnard School for Girls scholarship.

UPON the recommendation of Superintendent L. H. Minkel, of Fort Dodge, Ia., the board of education of that place has offered a bonus of fifty dollars to any teacher attending a six-weeks' summer school approved by the superintendent. Last year this privilege was extended to principals and supervisors only, but the results were so gratifying that the offer was extended to include all teachers. The board of education has purchased an automo-

bile for the use of the superintendent in visiting schools.

PROFESSOR JAMES W. GLOVER, of the University of Michigan, has compiled for the Bureau of the Census statistics which show the relative healthfulness of city and country. The death rate among white males under 1 year of age in cities having 8,000 inhabitants and over in 1909, and in cities of 10,000 and over in 1910 and 1911, is 13,380 per 100,000 born alive, whereas in smaller places the corresponding rate is only 10,326 per 100,000, or 23 per cent. less than the rate for cities. A similar difference prevails with respect to white females under 1 year of age, for whom the death rate in cities is 11,123 per 100,000 born alive, while in rural localities it is only 8,497 per 100,000, or 24 per cent. less than the urban rate. For white males the expectation of life, at birth, in rural localities is 7.7 years greater than in cities; at the age of 10, 5.4 years greater, and until the age of 39 is reached there is a margin of more than five years in favor of the country. Thereafter the difference becomes gradually less, but is always in favor of the country until the age of 88 is reached, at and after which the cities show a slightly greater longevity than the rural localities. For white females the difference between urban and rural longevity, while pronounced, is somewhat less than in the case of males. At birth the white female's expectation of life is 6 years greater in rural than in urban localities; at 10, 3.3 years greater, and until the age of 46 is attained the difference continues to be more than 3 years. Thereafter it declines until the age of 83 is reached, after which the cities have a slight advantage over the country.

ANNOUNCEMENT is made of the courses of instruction and the faculty at the University of Chicago during the coming summer quarter, which begins on June 19 and ends on September 1. The summer quarter at the university has the largest registration of the year, the attendance for that quarter in 1915 being 4,369. More than four hundred courses will be offered in the thirty-three departments of arts, literature and science and the professional schools of the university, and more than two hundred instructors will be on the summer faculty. Most of the latter are the regular faculty of the university, but sixty representatives of other institutions are also to give instruction during the summer quarter. Among the institutions represented are Yale, Princeton, Dartmouth, Cornell, the Massachusetts Institute of Technology, Smith College, the University of Pennsylvania, Leland Stanford Junior University, the State University of Iowa, the University of Wisconsin, the University of Missouri, Ohio State University, and the universities of Toronto, Alberta and Manitoba. In the school of education more than one hundred courses are offered that are especially adopted to the needs of superintendents, principals and teachers, of whom there is always a large attendance at the university during the summer quarter.

ANOTHER year will be added to the course of the school of journalism of Columbia University, beginning with the year 1918–19, making it a five-year course. The first two years will cover work generally taken by the college student and the final three years will be devoted to strictly professional work.

AN editorial article in the *Springfield Republican* remarks: "The Dartmouth faculty would seem to owe the public an official explanation of the expulsion of the student who criticized adversely the rule that attendance at a military training camp shall count toward an academic degree. But until the explanation is made, it will probably be wise not to accuse President Nichols and his associates of Prussian methods or to regard as a martyr the student who has been compelled to sever his connection with the college. There are so many thoughtful persons, including leading educators, who entirely agree with the student's criticism that the Dartmouth faculty would hardly penalize a man merely for publishing it."

DISCUSSION AND CORRESPONDENCE

THE TRAINING OF HIGH-SCHOOL TEACHERS

As I have watched the careers of my own students who have taught in high schools and of many others who have been more or less

successful in the profession and as I have studied the problem, I have come to certain conclusions in regard to the requirements for efficiency in this calling. Briefly stated they are, (1) attainment in and enthusiasm for cultural values, (2) understanding of and interest in developing youth, (3) a professional interest in the educative process, (4) power in teaching certain subjects. In these traits there is special emphasis on interest, attitude and enthusiasm, and it may well be suggested that these depend mainly on temperament, personality or native bent and are not a product of training. The emphasis is intentional, but I wish to show that our training must be such as to discover those having these essential gifts and then call forth and cultivate these capacities and train them for effective functioning in our secondary schools.

In these days of interest in vocational education we hesitate to use the phrase general culture in high school or college for fear of suggesting something so ethereal or perhaps aristocratic as to have no contact with real life in a true democracy. And yet we all believe that there are certain absolute values to which all vocations are subordinated and our high schools are so organized as to first of all give this liberal education that the pupil may be adjusted to these broad human interests not limited to any one occupation—such as, our language, social relations, moral experience, intellectual and esthetic interests. When vocational training is included it is not to supplant this broader culture, but rather to enable the pupil to properly relate his cultural interests to his life work. We include agriculture not to train youth to be farmers rather than men but rather to enable them to make their farm life and work contribute to their manhood.

Whether we are conscious of it or not, or whether we believe in it or not, this is the educational philosophy in accordance with which our high schools are organized. And the teacher who is interested only in training in a narrow, practical way, clerks, tradesmen, farmers or cooks will not succeed in interesting pupils in Latin, mathematics, ancient history or English literature. We must either turn our high schools into business colleges and trade schools or else provide teachers of real culture who actually believe in what they are supposed to be doing.

The one institution that by tradition and avowed purpose provides for this education is the American college. With its roots in the rich soil of the culture of Oxford and Cambridge, watered by the idealism of the Christian church and engrafted with the democratic principle of civic responsibility and social service, this is the one institution that has grown up among us as the expression of our best life and highest aspirations. The faculty of a real college is made up of men and women who are not primarily interested in highly specialized scholarship and scientific research nor in preparation for any special vocation, but such as have wide interests in scholarship and life and such mastery of one field of learning as to enable them to make it contribute to the development of manhood for general social efficiency. They create an atmosphere and a life in the institution where they live with their students and by impress of personality and real teaching that makes knowledge glow and take hold of the students in a vital, personal way, they make it possible for youth in the latter years of the adolescent period to come to his very own and bring to full fruition his normal idealistic and rational interests.

I do not believe that this liberal education can be successfully given in the undergraduate courses of a real university. Here under a research professor or his assistants they naturally become preparatory courses to the graduate school. The interest, attitude and aim are different. The university professor is interested in having the student master the subject with thoroughness and completeness of detail and in giving him the method and technique of the specialist rather than in using the subject to develop the student and preparing him for true and efficient living.

In certain sections of our country there is a strong effort made to extend the system of junior colleges, giving two years of college work. This plan presupposes that the college

has no special function of its own, but that the first two years of college work is only advanced secondary work and can therefore be given by high-school and academy teachers in connection with their other courses. It is true that at present the college must do too much secondary work, but with the reorganization of the public schools on the six-six plan I believe that well-qualified teachers can do this secondary work in the six years of the high-school course. At any rate the college atmosphere can not be developed in a two-years course. The upper classmen are always an essential factor in college life and activities and it takes time for the student to readjust himself to the new ideals and relationships and grow into them.

Neither can the normal college nor the school of education be true to their function and do justice to the work of the real college of liberal arts. Here the whole atmosphere is vocational. The subjects are studied with the definite purpose of teaching them. Their value is again preparatory or instrumental rather than cultural. The student should first of all get these subjects for his own needs and appreciate their value as cultural and liberalizing for himself. Later as an educated man in the professional school he will study these same subjects again in order to master and organize them for teaching purposes.

Our first requirement for the high-school teacher is then that he shall be educated. The second is that he should understand and love youth of the early adolescent period. This is largely a matter of temperament, yet he who expects to teach youth should keep alive his own boyish and youthful interests. College activities afford the best opportunities for this purpose. Athletics, musical clubs and social activities keep alive the youthful play spirit and any accomplishment along these lines will serve as a real point of contact with the boys and girls. This interest must, however, be properly subordinated to the cultural and professional phases of his work or the teacher will fail entirely as an educator of youth.

In addition to this, however, an essential part of the professional training should consist of the study of adolescent psychology and the psychology of high-school subjects. Hall, King, Judd and others have made it possible for high-school teachers to become real specialists in youth. It is not enough to understand the mental processes of the adult. In fact our chief fault perhaps is that we judge boys and girls by ourselves instead of adjusting ourselves to them.

The high-school teacher, in order to succeed, must be a professional educator. He must see his work in its true relationship to the whole of education and to the whole of life. No man of large capacity and interest will long be satisfied with a task that seems to him small and insignificant. He may enjoy poetry and like athletics and be popular with the boys but unless he sees his work in its larger relationships it will soon pall upon him and he will look for a man's job or perhaps content himself with anything that pays more money.

This requirement can not be attained by making a few prescribed credits in pedagogy, as part of a liberal-arts or normal-school course. In the first place there are a number of subjects that are essential prerequisites to the study of education. The aims of education, if it is to be both fundamental and significant to the teacher, he must find in the philosophy and ethics that he has made his own with the aid of good teaching in these subjects.

Biology, sociology, logic and psychology are just as basic for the science of education as are chemistry, physiology and bacteriology for the science of medicine. In this case the medical schools who are supposedly ignorant of pedagogy, are "wiser in their generation than the children of light." It is not possible to gain time by omitting these basal subjects. If we are to get the social principles of education, we must either have had sociology or stop then and there and get it. We must get both or neither and the usual attempt means the latter. To be significant and vital, so as to make teaching a meaningful process, the theory of education must be thoroughgoing and clear and without the prerequisites this is impossible.

We are all familiar with the essential courses

in education and we all believe in them. However, we need time to teach them and each teacher must have all the fundamental courses, but our allotted fifteen hours do not provide sufficient time for this essential core of the teacher's training. Where can we borrow?

Finally all of this equipment must come to a focus in the ability to teach well one or two subjects of the high-school curriculum, and the whole undertaking will fail if he does not know his subject. Here is where the professor of the graduate school says Amen, but I am not sure that he can always be of service. I doubt whether the research work for the Ph.D. degree is profitable for the high-school teacher. It cultivates wrong attitudes and interests. It transfers the dominant interest from the student to the subject and develops the scholar rather than the teacher of youth. The teacher wants more than the college gives him for his own education but he wants such wider knowledge as will function most directly for teaching the elements used in the high school. Not the cramming review of the normal school but the professional course of the school of education. Not all that the graduate student gets in his Ph.D. course in mathematics is equally useful for teaching algebra and geometry in the high school. The school of education will aid him in selecting this useful knowledge, help him to organize it for teaching purposes and show him how it can be used in the high-school courses.

Courses in general methods and special methods of the subject, illustrated in good teaching and applied in practise under supervision, we all believe in, but very few of us succeed to our own satisfaction in making it most useful for the prospective teacher. But in time we shall learn how.

I have so far outlined the requirements and indicated that the general culture should be given in the college. When and where can we provide for the remainder? I will suggest a plan that seems to me could easily be worked in Ohio.

With a six-year high school of the six-six school plan and professionally trained teachers I believe we could reduce the A.B. college course to three years and provide for the general academic courses and the basal subjects needed as a prerequisite for education. The person who would later be interested in teaching as a vocation would naturally elect these subjects because of his own interests in them. They would be an integral part of his cultural education as well as a preparation for his professional work.

The strictly professional training, including the advanced courses for teachers in the teaching subject and all the education courses and practical training could be given in a two-years course, in a graduate school of education leading to the A.M. degree.

The colleges will no doubt object to reducing their A.B. course to three years. But we have in fact quite generally admitted that we need only three years for the general courses. Our state university cooperates with a number of colleges in giving both A.B. and B.S., in agriculture in three years at the college and two in school of agriculture. Similarly two degrees are given in five years in arts and education, and arts and engineering. In many universities, college seniors are given a leave of absence to attend law, medical or theological schools. If all these need only three who needs four? If we can hold all our students for three years and make these prerequisite for all professional courses, including journalism, commercial, etc., it will be a gain for the college and she can remain true to her function and ward off the disintegration that is now endangering her very existence.

In Ohio with our various state and many endowed institutions we are very favorably situated to carry out such a plan. If the smaller colleges would devote all their resources to the three-years A.B. course, and Ohio State University cease giving this degree, I believe that all students would be better provided for than they are now and Ohio State could develop a strong graduate school. The two years' graduate work in education could be given in the larger colleges and in the three state universities. The other normal colleges could devote all their efforts to the training of elementary teachers.

If it is thought that five years is too long a minimum period of preparation for all high-school teachers then I would suggest that a four-year provisional state license be granted after the completion of four years of the combined course and a life license after three years' experience and the additional year's work in the school of education are completed. This work could be completed in summer schools thus not requiring the sacrifice of a year's salary.

This plan thus provides for such coordination and cooperation among the institutions of the state as should provide for real colleges, a sufficient number of good schools of education and a university true to its title. At present we are in danger of having none of these. Every phase of teacher training would be well provided for and it would work no hardship for any one.

N. E. Byers

Bluffton College

QUOTATIONS

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Boston and Cambridge, proud to be the site of Technology's great celebration, must know that the events of the week will be watched and heralded all through the country. The fact is that Technology, or its reputation at least, has been moving ever since the Institute opened. Out from the darkened brick walls of its buildings in the Back Bay, its fame has spread beyond the confines of city and state and become known in all of the nation. As much as twenty years ago small boys in the Middle West, talking of the colleges which they might enter, spoke with bated breath of "Boston Tech." Ah, that was a place where you had to work, depend upon it! If you didn't mean business and think you were going to be a great electrical engineer, then you'd best have nothing to do with it. The talk of the boys echoed their elders, who had formed their own opinions still more advisedly. There were many then, and many more to-day, who knew from men in professional life and in industry that a degree from Technology was accepted as a stamp of ability such as few colleges gave. It meant hard work and the acquisition of much applicable knowledge.

With the spirit of work moving day in and day out during all the fifty years of Technology's life, small wonder that the Institute finds itself ready to-day to enter upon a remarkably expanding period of its history. The great new plant on the Charles is more than the product of so many dollars given from any blind loyalty. It is the return, the larger opportunity, earned by the Institute, which, faithful over a few things, is worthy to be given charge over many. The scope of Technology's work had outgrown not only the Boylston street buildings but also all the scant possibilities of enlargement which the encroaching advance of commercial business left to it in the Back Bay. The Institute's methods required the constant development of its laboratory system. It was not enough for the school to teach theory. It must also teach men to put every theory into practise. So the necessity of a much enlarged plant became imminent, and the fulfillment of this need was not slow in coming to an institution which had proved so well its usefulness. On its site on the Charles, there is room for expansion even to twice the size of its new buildings.

Passing over the Charles, the Institute does not lose anything of the ideals and the methods which have made it great in the past. The danger is small that it will. By each of the departments, the new buildings are being regarded far less for the superior comfort they will afford than for the opportunities they give of carrying forward important projects which have long been cherished by the professors. The department of chemistry, for example, taking its new quarters at the same time that it opens its branch laboratories in six industrial plants, will enter upon an almost entirely novel period of efficiency and expansion. So as the Institute moves, the thousands of alumni who are here for the celebration, the people of Boston, interested men and women throughout the United States and foreign countries, stand securely in the confidence that all that was best in the old Technology will move with Presi-

dent Maclaurin as he crosses in the bucentaur, and that the Institute's first centennial, fifty years from to-day, will make even the present cause for celebration seem little by contrast.—The Boston *Evening Transcript*.

EDUCATIONAL RESEARCH AND STATISTICS

THE DISTRIBUTION OF HIGH-SCHOOL GRADUATES IN FIVE NORTH CENTRAL STATES[1]

IN February, 1913, an article appeared in the *School Review*[2] which for the first time proposed the problems which underlie the present study. The author of this paper sought to determine, among other things, "the percentages of high-school graduates who enter, respectively, colleges, normal schools, immediate teaching, professional schools, business and trades," and "the comparative ranks of the students who enter colleges and those who enter the normal schools and other callings." His study was based upon the records of 735 graduates of high schools in the state of New York. Among his conclusions are the following: "the group of students who go to college is larger than any other group, and the students belonging to this group are distinctly above the average;" "the normal-school group is made up more liberally from the lower grades;" "the professional-school group is small" and is drawn largely from students of inferior scholarship.

This study was followed a year later by another[3] based upon the records of 845 graduates of Iowa high schools. The results of this investigation show that teaching, normal schools and arts colleges drew principally from the students making high grades in high school, while agriculture, the professions and business drew more largely from those making inferior grades. Both of these writers evidently mean by the "professions" those which admit high-school graduates to training without a probationary period spent in college.

There are several reasons why these studies may properly be followed by another dealing with the same problems. First, both are based upon a comparatively few cases. There is need for a study in which a much larger number of cases has been considered. Again, the results of the studies quoted are not entirely concurrent. Thus the Iowa study indicates that the teaching profession is recruited from the high school's better students, while the New York study indicates the opposite. Still further, a careful reading of both the articles referred to suggests that the higher scholarship apparently selected by certain courses of training and by certain occupations may be due in part to the real selection of women, and to the known superiority of the school marks of girls. Sex-differences, both as to scholarship and occupation, appear to have been overlooked.

PROBLEMS

The present investigation, therefore, raises the following questions:

1. In what proportions are high-school graduates distributed among the different types and departments of higher institutions, and among different occupations?

2. Which of these institutions, departments or employments attract the graduates who make good grades in school, and which attract those who make poor grades?

3. What sex-differences are discernible, as to choice of schooling or calling, and as to the relation of this choice to scholarship in the high school?

MATERIALS

The materials of this investigation comprise the scholarship records, for the senior year only, of the graduates of 118 high schools of the middle west. In addition to this senior scholarship record, facts were sought regarding the occupation of each graduate, or his post-high-school professional or academic training. These necessary data were secured

[1] The writer wishes to express his obligation to two of his former students at the University of Minnesota, Messrs. R. J. Ilse and W. W. Barr, who did a large part of the compilation involved in the study.

[2] Shallies, Guy-Wheeler, "The Distribution of High-school Graduates after Leaving School," *School Review*, 21, 81–91.

[3] Mitchell, H. E., "The Distribution of High-school Graduates in Iowa," *School Review*, 22, 82–92.

for 2,426 students, including 886 males and 1,540 females. One hundred and sixty-three graduating classes are represented, scattered over the years 1910, 1911 and 1912. These classes range in size from 3 to 58 students, the median size being 15. The high schools studied were distributed over five states in the following numbers: Minnesota—78, North Dakota—9, South Dakota—8, Iowa—15, Wisconsin—8.

These statements may well give rise to several questions. Why, for instance, were only the senior records used, instead of the records for the whole high-school course? Because it seemed probable that superintendents would be more willing to copy and forward the records for one year than for four. This expectation has been fulfilled in that the present study contains nearly three times as many cases as either of its predecessors. It also seemed probable that the scholarship shown during the last high-school year would be more nearly typical of the settled ability of each student than would that shown during the earlier pubescent years. The professional reader will further recall that different investigators have established a high positive correlation between the scholarship rank of a student during one high-school year and his rank during the succeeding or preceding years. Again it may be asked, why are the schools scattered over five states? Because number of cases seemed more important than geographical restriction by an imaginary line forming a state boundary. The states chosen, however, make a fairly homogeneous group. As to the fact that the classes are scattered over three years, it may be said that the results for each year have been separately compiled and found to be very closely parallel.

METHODS

The senior scholarship record of each graduate was first averaged. In making these averages all of the marks in all senior subjects were considered.

The members of each class were then ranked in order of merit from poorest to best, upon the basis of their scholarship averages.

Each ranked series was then divided into three equal, or nearly equal, sections or tertiles. When a class would not divide equally, the extra cases were placed in the middle and lowest groups. As a result the tertiles when totaled yielded different numbers of cases, but these differences are accounted for in the correction described below.

The students of each sex who had selected similar types of training or employment were next sought out and grouped together. Here only the immediate choice was considered; *i. e.*, what the student did *the year next following his graduation* from high school.

The number of males or females entering each type of calling or training was divided by the total number of graduates of that sex included in the study. In this way the percentages entering the different lines of activity were ascertained.

The tertile distribution of the males and females entering each type of training or occupation was next found. The number actually found in each of the three tertiles was divided by the number to be expected in each case. This division was made necessary by the fact that the females ranked higher in scholarship than did the males, so that more males would be expected in the third tertile than in the first and more females in the first tertile than in the third, and by the further fact that the tertiles when totaled were unequal in size. The percentage of each sex to be expected in each tertile was as follows: Males: first tertile—27.3, second—35.8, third—36.9; Females: first tertile—34.8, second—35.9, third—29.3. The superior scholarship of the females is thus evident at the start.

RESULTS

1. Of the 2,426 graduates for whom the necessary data were obtained, 18 had died and 43 had either studied or taught music. After subtracting these there remain 2,365, including 877 males and 1,488 females, for whom the facts regarding employment *versus* training distribution can be adequately stated. These are distributed as in Table I. The percentages in this and the following tables are based upon 886 males and 1,540 females, that being the

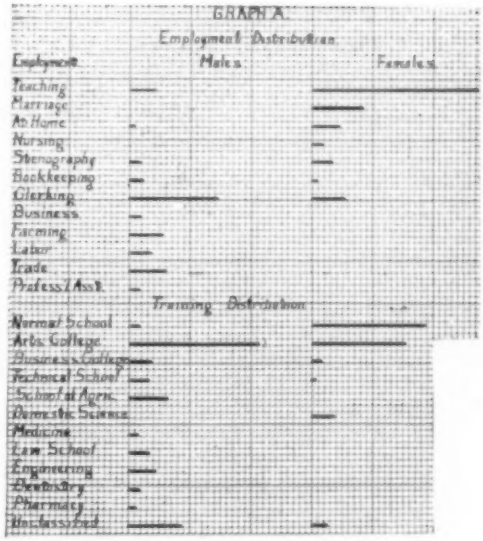
number of each sex for whom the total distribution data, including music and death, were accessible.

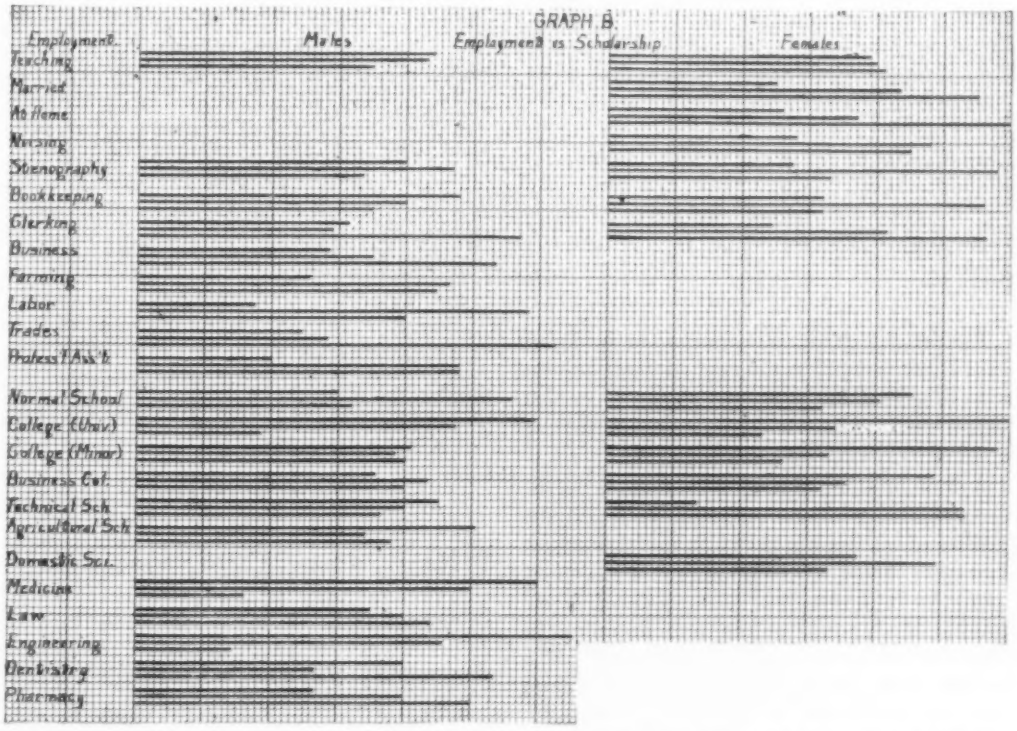
TABLE I

Occupation	Males		Females	
	Cases	Per Cent.	Cases	Per Cent.
Immediate employment	371	41.7	802	51.6
Higher training	506	56.9	686	43.2

From this table it would appear that more than half of the males and fewer than half of the females enrolled in some institution for advanced training. The significance of this fact is discussed in the summary.[4]

2. The students of the two sexes were distributed among the various employments and types of training as shown in Tables II. and III., and as illustrated in Graph *A*.





[4] It should be noted that these percentages are of that enrollment for whom these data could be based, not upon the total enrollment of the different graduating classes, but upon the 80 per cent. obtained.

TABLE II

Employment Distribution

Employment	Males		Females	
	Cases	Per Cent.	Cases	Per Cent.
Teaching	37	4.2	421	27.3
Married	.....	.....	128	8.3
At home	6	0.7	73	4.7
Nursing	.....	.....	28	1.8
Stenography	16	1.8	56	3.2
Bookkeeping	20	2.2	15	1.0
Clerking	129	14.5	81	5.3
Business	24	2.7	.....	.....
Farming	50	5.6	.....	.....
Labor	32	3.6	.....	.....
Trade	48	5.4	.....	.....
Profess'l assist.	14	1.6	.....	.....

TABLE III

Training Distribution

Type of Training	Males		Females	
	Cases	Per Cent.	Cases	Per Cent.
Normal school	14	1.6	292	18.9
Arts college	188	21.2	241	15.6
University	(106)	(11.9)	(130)	(8.5)
Minor college	(82)	(9.3)	(111)	(7.1)
Business college	33	3.7	25	1.6
Technical school	29	3.3	9	0.6
Agricultural school	56	6.3	.....	.....
Domestic science	.....	.....	59	3.8
Medicine	13	1.4	.....	.....
Law	29	3.3	1	0.1
Engineering	39	4.5	.....	.....
Dentistry	17	1.8	.....	.....
Pharmacy	10	1.1	.....	.....

Besides the graduates represented in Table III., there were 77 males and 41 females who were described in the reports as entering some higher institution, but for whom the nature of these institutions was not indicated.

3. The primary aim of this study is to ascertain the relations existing between the quality of scholarship shown in the high school and the choice of training or employment made by its graduates. The mode of determining these relations has been described in the last paragraph under "Methods." The results thus derived are presented in Tables IV. and V., in each of which the column entitled "Percentage Index" is the focal point. The figures in this column were obtained by dividing the number actually found by the number expected in each tertile in each case. These columns are illustrated in Graph *B*.

TABLE IV

Employment versus Scholarship

Employment	Tertile	Males			Females		
		Expected	Found	Percentage Index	Expected	Found	Percentage Index
Teaching	1	10	11	110.0	147	143	97.3
	2	13	14	107.7	151	150	99.3
	3	14	12	85.7	123	128	103.7
Married	1	...	...	.....	45	28	62.2
	2	...	...	.....	46	49	108.7
	3	...	...	.....	37	51	137.8
At home	1	2	0	0.0	25	15	64.0
	2	2	3	150.0	26	24	92.3
	3	2	3	150.0	22	33	150.0
Nursing	1	...	...	.....	10	7	70.0
	2	...	...	.....	10	12	120.0
	3	...	...	.....	8	9	112.5
Stenography	1	4	4	100.0	19	13	68.4
	2	6	7	116.7	20	29	145.0
	3	6	5	83.3	17	14	82.4
Bookkeeping	1	5	6	120.0	5	4	80.0
	2	7	7	100.0	5	7	140.0
	3	8	7	87.5	5	4	80.0
Clerking	1	32	25	78.1	28	17	60.0
	2	43	31	72.1	29	30	103.4
	2	44	63	143.2	24	34	141.7
Business	1	7	5	71.4	...	...	.....
	2	8	7	87.5	...	...	.....
	3	9	12	133.3	...	...	.....
Farming	1	14	9	64.3	...	...	.....
	2	18	21	116.7	...	...	.....
	3	18	20	111.1	...	...	.....
Labor	1	9	4	44.4	...	...	.....
	2	11	16	145.5	...	...	.....
	3	12	12	100.0	...	...	.....
Trade	1	13	8	61.6	...	...	.....
	2	17	12	70.7	...	...	.....
	3	18	28	155.5	...	...	.....
Professional Assistant	1	4	2	50.0	...	...	.....
	2	5	6	120.0	...	...	.....
	3	5	6	120.0	...	...	.....

4. Inspection of Tables IV. and V. will show that certain immediate occupations are closely related to certain types of training. Thus the business occupations are related to

TABLE V

Training versus Scholarship

Type of Training	Tertile	Males			Females		
		Expected	Found	Percentage Index	Expected	Found	Percentage Index
Normal school	1	4	3	75.0	102	117	114.7
	2	5	7	140.0	105	107	101.9
	3	5	4	80.0	85	68	80.0
Arts college (total)	1	51	66	129.4	84	125	148.8
	2	67	73	108.9	87	73	83.9
	3	70	49	70.0	70	43	61.4
Arts college (univ.)	1	29	43	148.3	45	68	151.1
	2	38	45	118.4	47	40	85.1
	3	39	18	46.2	38	22	57.9
Arts college (minor)	1	22	23	104.5	39	57	146.2
	2	29	28	96.6	40	33	82.5
	3	31	31	100.0	32	21	65.6
Business college	1	9	8	88.9	9	11	122.2
	2	12	13	108.3	9	8	88.9
	3	12	12	100.0	7	6	85.7
Technical school	1	8	9	112.5	3	1	33.3
	2	10	10	100.0	3	4	133.3
	3	11	10	90.0	3	4	133.3
Agric. school	1	15	19	126.7	...	...	.....
	2	20	17	85.0	...	...	.....
	3	21	20	95.2	...	...	.....
Domestic science	1	...	...	.....	21	19	90.5
	2	...	...	.....	21	26	123.8
	3	...	...	.....	17	14	82.4
Medicine	1	4	6	150.0	...	...	.....
	2	4	5	125.0	...	...	.....
	3	5	2	40.0	...	...	.....
Law	1	8	7	87.5	...	...	.....
	2	10	10	100.0	...	...	.....
	3	11	12	109.1	...	...	.....
Engineering	1	11	18	163.6	...	...	.....
	2	14	16	114.3	...	...	.....
	3	14	5	35.7	...	...	.....
Dentistry	1	5	5	100.0	...	...	.....
	2	6	4	66.7	...	...	.....
	3	6	8	133.3	...	...	.....
Pharmacy	1	3	2	66.7	...	...	.....
	2	3	3	100.0	...	...	.....
	3	4	5	125.0	...	...	.....

business training, and the industrial occupations to agricultural and technical training. It is possible to group in this way all of the post-high-school activities of the males under

TABLE VI

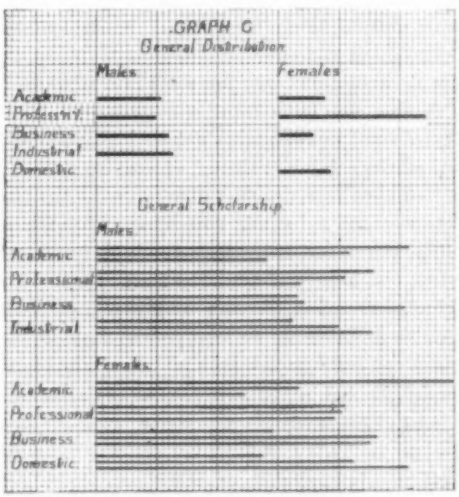
General Occupation Distribution

Occupation	Males		Females	
	Cases	Per Cent.	Cases	Per Cent.
Academic	188	21.2	241	15.6
Professional	173	19.5	750	48.7
Business	212	23.9	177	11.5
Industrial	221	24.9	.....	.....
Domestic	.....	.....	259	16.8

TABLE VII

General Scholarship Distribution

Occupation	Tertile	Males			Females		
		Expected	Found	Percentage Index	Expected	Found	Percentage Index
Academic	1	51	66	129.4	84	125	148.8
	2	67	73	108.9	87	73	83.9
	3	70	49	70.0	70	43	61.4
Professional	1	47	54	114.9	261	268	102.6
	2	62	65	104.8	269	273	101.5
	3	64	54	84.4	220	209	98.6
Business	1	58	48	82.7	62	45	72.6
	2	76	65	85.5	64	74	115.6
	3	78	99	126.9	51	58	113.7
Industrial	1	60	49	81.7	...	...	.....
	2	79	79	100.0	...	...	.....
	3	82	93	113.4	...	...	.....
Domestic	1	...	...	.....	90	62	68.9
	2	...	...	.....	93	99	106.4
	3	...	...	.....	76	98	128.9



the heads of academic, professional, business and industrial activities; and all those of the females under the heads of academic, professional, business and domestic activities. In most instances classification is easy, but a few arbitrary assignments must be made. Should agricultural training be classed as industrial or professional, and should domestic science be regarded as domestic or professional? In both cases the first alternative has been chosen.

Table VI. shows the percentage of males and females who selected each general type of activity, and Table VII. describes their tertile distribution. Both tables are illustrated in Graph *C*.

In both of these tables the rubric "occupation" is intended to include both employment and training activities.

SUMMARY

So far as this investigation is concerned, the following statements are warrantable as to the nature of the post-high-school activities of high-school graduates.

1. More than half of the males and fewer than half of the females undertake some course of advanced training. It is probable that this difference depends for explanation partly upon a selective elimination which took place among the males in earlier years. As Van Denburg[5] says, "The boys who think that they can gain the necessary training for their lifework in any other way than through the high school have chosen that other way," while probably more of the girls have remained till graduation simply because it was the social thing to do.

2. Females with even a high-school education do not yet vie with the males in the variety of their later training or employment.

3. There is a decided difference in the preferences shown by the two sexes. Among the males the order of preference, from greatest to least, is arts college, clerking, agricultural school, farming, trade, engineering school, teaching, business college, labor, law or technical school, bookkeeping, business, stenography, dental school, professional assisting or normal school, medical school, school of pharmacy. The order of preference shown by the females is as follows: Teaching, normal school, arts college, marriage, clerking, staying-at-home, domestic science, stenography, nursing, business college, bookkeeping and technical school. The largest percentage of females enters professional endeavors (including teaching), and the smallest percentage enters business; while of the males the largest number enter industrial and the smallest number enter professional lines of work or training.

As to the relation between choice of employment or training and quality of high-school scholarship, the following statements may be made:

1. In general the members of both sexes who enter some immediate employment rank lower in scholarship than those who enter upon some form of advanced training.

2. Those students of both sexes who take up academic pursuits in colleges or universities rank highest, and those who enter professional training or employments rank next.

3. The members of both sexes who enter upon a business career either directly from high school or through the business colleges, are drawn chiefly from the lower ranks.

4. Domestic occupations select females, and industrial occupations select males, from the lower high-school ranks.

5. The arts colleges of the large universities select a type of male students decidedly superior to that selected by the small denominational schools. This difference, however, is much less conspicuous among the females. As the University of Minnesota was the chief instrument of college training for the graduates studied, the difference here noted may be partly due to the strict entrance requirements prevailing at that university during the period to which this study refers.

6. Among the different types of professional training engineering and medicine draw from the males making superior grades, while law, dentistry and pharmacy attract those who make inferior grades in greater numbers.

7. Immediate teaching draws about equally from all grades of scholarship in both sexes while normal-school training attracts a medi-

[5] Van Denburg, J. K., "The Elimination of Pupils in Public Secondary Schools," Teachers College Contributions to Education, Number 47, p. 103.

ocre class of males and a slightly superior class of females.

8. The arts college attracts the superior students of both sexes; but the proportion of females from the first ranks is greater than that of the males, while the proportion of males from the lowest ranks is correspondingly the greater.

9. The deceased of both sexes come principally from the lowest rank. This fact supports the prevailing theory of a relation between health and scholarship.

The reader must constantly bear in mind that these statements refer only to the choice made immediately after high-school graduation. This study offers no data bearing upon the extent or nature of later changes.

INTERPRETATION

While the primary aim of this paper is to review the facts as found, it seems proper to call attention to several interpretations of which these facts permit. The problem is: Why do some lines of activity, such as the domestic, business or industrial, select upon the whole students of inferior high-school scholarship, while others, such as advanced professional and college work, select those of superior rank?

One possible interpretation is that boys and girls of inferior native ability enter domestic occupations, industry and business, while those of greater native ability go to college or enter the professions. These variations in innate abilities account for the different quality of high-school scholarship shown by each group. Another possible interpretation would be that, in the case of some of these groups at least, the abilities of the different classes of students differ qualitatively, and that the peculiar abilities which industry and business select are not of the sort which would earn for their possessors the highest marks in high school. Yet a third possible interpretation would make interest, rather than ability, the basis of explanation. The major activities of the average high school are more satisfying to students whose interests are academic or professional than to those whose interests lie in the fields of industry and business.

The author is unable to state which of the above interpretations is the correct one. It is not improbable that all three play a part. Clearly there is need for yet further investigation of the problems which this study has raised, to explain as well as to test its conclusions.

B. F. PITTENGER
SCHOOL OF EDUCATION,
UNIVERSITY OF ILLINOIS

SOCIETIES AND MEETINGS

THE NATIONAL EDUCATION ASSOCIATION

THE program for the general sessions of the New York meeting to be held in the Madison Square Garden is as follows:

MONDAY AFTERNOON, JULY 3, 2:30 O'CLOCK

David Starr Jordan, chancellor emeritus of Stanford University, the retiring president, will preside. Addresses of welcome will be made by Governor Whitman, President John H. Finley, of the University of the State of New York and state commissioner of education; Mayor Mitchel, President William G. Willcox of the Board of Education, City Superintendent of Schools William H. Maxwell, and Charles B. Alexander, regent of the University of the State of New York. Chancellor Jordan will respond to the addresses of welcome, the rest of the program being as follows:

President's address, "Moral Training in the Schools," David Bancroft Johnson, president Winthrop Normal and Industrial College, Rock Hill, S. C.

"A National Program of Education," P. P. Claxton, United States Commissioner of Education, Washington, D. C.

"Is there Waste in Modern Education?" William H. Taft.

Announcement of the Committee on Resolutions.

Meetings of the active members by states for the selection of members of the Nominating Committee will be held at 6:30 P.M. at the close of the session at places designated in official announcements.

MONDAY EVENING, JULY 3, 8 O'CLOCK

"Organized Recreation," Warren Dunham Foster, department editor of *The Youth's Companion*, Boston, Mass.

"The Elimination of Adult Illiteracy," Cora Wilson Stewart, president of the Kentucky Illiteracy Commission, Frankfort, Ky.

"American Leadership and the Country School," Albert Shaw, editor of the *Review of Reviews*, New York City.

"First Aid to the Country Teacher: A Suggestion as to Vitalizing the Country Schools through our Present Teachers," J. D. Eggleston, president of the Virginia Polytechnic Institute, Blacksburg, Va.

"Public Health and the Public Schools," Robert L. Owen, United States senator from Oklahoma.

TUESDAY EVENING, JULY 4, 8 O'CLOCK

"The Secular Free Schools," Mrs. Ella Flagg Young, Los Angeles, Calif.

"The Place of the State University in a Democracy," Charles R. Van Hise, president of the University of Wisconsin, Madison, Wis.

"The Place of the Normal School in a Democracy," John R. Kirk, president of the State Normal School, Kirksville, Mo.

Address, William Jennings Bryan.

WEDNESDAY AFTERNOON, JULY 5, 2:30 O'CLOCK

"Preparedness through Education for a Democracy," James Y. Joyner, state superintendent of public instruction, Raleigh, N. C.

"Shall the American Common School be reduced to a Position of Little Influence as an Instrument of Democracy?" Carroll G. Pearce, president of the State Normal School, Milwaukee, Wis.

"The Present War and Education," G. Stanley Hall, president of Clark University, Worcester, Mass.

"What the Public Schools can do toward the Maintenance of Permanent Peace," Fannie Fern Andrews, secretary of the American School Peace League, Boston, Mass.

"Mass Instruction through Group Training," O. B. Martin, Demonstration Club Work, United States Department of Agriculture, Washington, D. C.

"The Socialized Recitation," Fred. M. Hunter, superintendent of city schools, Lincoln, Nebr.

WEDNESDAY, JULY 5, 8 P.M.

"The Education of the Negro," Hollis B. Frissell, principal of the Hampton Normal and Industrial Institute, Hampton, Va.

"The Education of the Alien," John H. Finley, state commissioner of education, Albany, N. Y.

"Vocational Education," John D. Shoop, superintendent of city schools, Chicago, Ill.

"National Aid to Vocational Education," H. H. Seerley, president of State Teachers' College, Cedar Falls, Iowa.

"Industrial Education," William C. Redfield, secretary of commerce, Washington, D. C.

Appointment of Committee on Nominations.

THURSDAY, JULY 6, 2:30 P.M.

"Preparing Teachers for Leadership in all Special Education," J. W. Crabtree, president of the State Normal School, River Falls, Wis.

"Educational Preparation for Foreign Service," Glen Levin Swiggett, assistant secretary general, The Second Pan-American Scientific Congress, Washington, D. C.

"Salaries and Pensions of Teachers," Joseph Swain, president of Swarthmore College, Swarthmore, Pa.

"Teachers' Cottages," Josephine Corliss Preston, state superintendent of education, Olympia, Wash.

"The Junior High School," Charles H. Johnston, University of Illinois.

"The Junior College," James M. Wood, president of Stephens Junior College, Columbia, Mo.

THURSDAY, JULY 6, 8 P.M.

"Readings from his own Poems," Robert Underwood Johnson, permanent secretary of the American Academy of Arts and Letters, New York City.

"The Story of My Life," Anna Shaw, Moyland, Pa.

"The Discipline of History Study," W. M. Sloane, chancellor of the American Academy of Arts and Letters, New York City.

"Chinese Education," V. K. Wellington Koo, ambassador from China to the United States, Washington, D. C.

"Trust in Humanity," Thomas Mott Osborne, ex-warden of Sing Sing Prison, New York.

Address, William G. McAdoo, secretary of the treasury, Washington, D. C.

FRIDAY, JULY 7, 8 P.M.

"The Gary Plan," William A. Wirt, superintendent of city schools, Gary, Ind.

"The American School and the Workingman," Samuel Gompers, president of the American Federation of Labor, Washington, D. C.

"Nationalizing Education," John Dewey, Columbia University, New York City.

"Possibilities of a National University at the Capital," Simeon D. Fess, member of congress from Ohio.